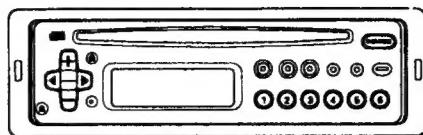


# Service Manual

● DEH-605RDS



ORDER NO.  
**CRT1563**

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

HIGH POWER CD PLAYER WITH RDS TUNER

**DEH-605RDS**

**EW,X1B/EW**

HIGH POWER CD PLAYER WITH FM/MW/LW TUNER

**DEH-505SDK**

**GR**

**DEH-505**

**EW,X1B/EW**

**DEH-405SDK**

**GR**

**DEH-405**

**EW,X1B/EW**

- See the service manual CX-540(CRT1574) for the CD mechanism description, disassembly and circuit description.
- The CD mechanism employed in this model is one of CX-540 series.

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## **CHAPTER 1**

### **● CD Player Service Precautions**

1. For pickup unit(CGY1031) handling, please refer to "Disassembly"(CX-540 Service Manual CRT1574). During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

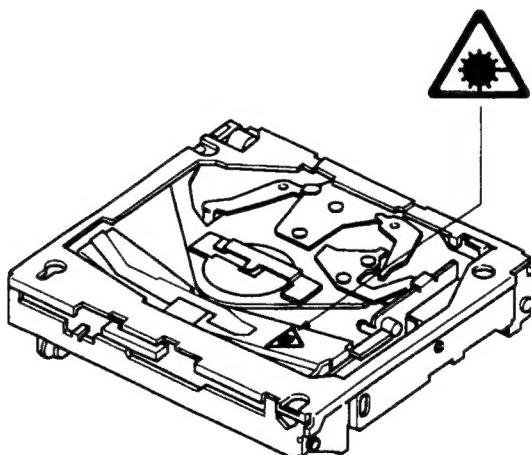
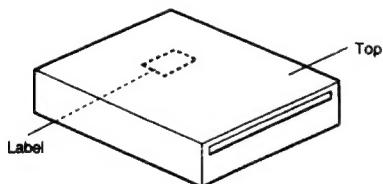
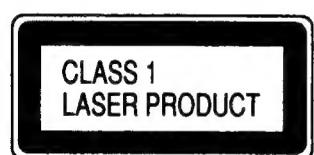
## **SAFETY INFORMATION**

### **1. Safety Precautions for those who Service this Unit.**

- Follow the adjustment steps (see pages 1-26 through 1-32) in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

#### **Caution:**

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
  2. During repair or tests, do not view laser beam for 10 seconds or longer.
- 
2. A "CLASS 1 LASER PRODUCT" label is affixed to the rear of the player.
  3. The triangular label is attached to the mechanism unit frame.



### **4. Specifications of Laser Diode**

Specifications of laser radiation fields to which human access is possible during service.

Wavelength = 785 nanometers

Radiant power = 69.7 microwatts(Through a circular aperture stop having a diameter of 80 millimeters)  
0.55 microwatts(Through a circular aperture stop having a diameter of 7 millimeters)

## 1. SPECIFICATIONS

### General

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)  
 Grounding system ..... Negative type  
 Max. current consumption ..... 6 A  
 Dimensions (chassis) ..... 178 (W) × 50 (H) × 150 (D) mm  
     (front face) ..... 188 (W) × 58 (H) × 20 (D) mm  
 Weight ..... 1.5 kg

### Amplifier

Max. power output ..... 22 W × 4 (EIAJ)  
 Continuous power output ..... 14 W × 4 (DIN 45324, +B=14.4 V)  
 Load impedance ..... 4Ω (4 — 8Ω allowable)  
 Preout output level/  
     output impedance ..... 500 mV/1 kΩ  
 Tone controls (bass) ..... ±10 dB (100 Hz)  
     (treble) ..... ±10 dB (10 kHz)  
 Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz)  
     (volume: -30 dB)

### CD player

System ..... Compact disc audio system  
 Usable discs ..... Compact disc  
 Signal format ..... Sampling frequency: 44.1 kHz  
     Number of quantization bits: 16; linear  
 Frequency characteristics ..... 5 — 20,000 Hz (±1 dB)  
 Signal-to-noise ratio ..... 94 dB (1 kHz) (IEC-A network)  
 Dynamic range ..... 90 dB (1 kHz)  
 Number of channels ..... 2 (stereo)

### FM tuner

Frequency range ..... 87.5 — 108 MHz  
 Usable sensitivity ..... 11 dBf (1.0μV/75Ω, mono, S/N: 30 dB)  
 50 dB quieting sensitivity ..... 16 dBf (1.7μV/75Ω, mono)  
 Signal-to-noise ratio ..... 70 dB (IEC-A network)  
 Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)  
 Frequency response ..... 30 — 15,000 Hz (±3 dB)  
 Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

### MW tuner

Frequency range ..... 531 — 1,602 kHz  
 Usable sensitivity ..... 18μV (25 dB) (S/N: 20 dB)  
 Selectivity ..... 50 dB (±9 kHz)

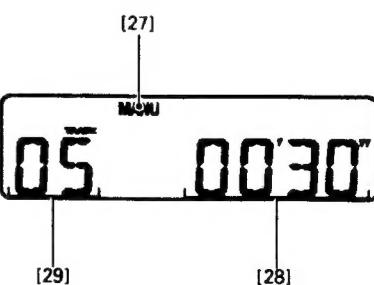
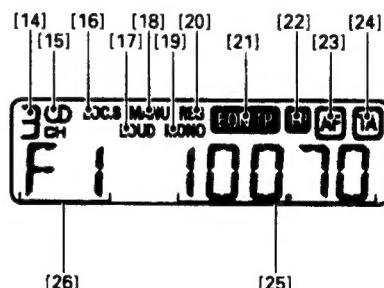
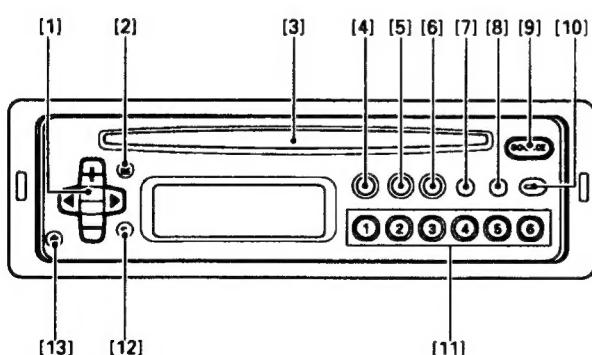
### LW tuner

Frequency range ..... 153 — 281 kHz  
 Usable sensitivity ..... 30μV (30 dB) (S/N: 20 dB)  
 Selectivity ..... 50 dB (±9 kHz)

### Note:

Specifications and the design are subject to possible modification without notice due to improvements.

## 2. OPERATION AND CONNECTION



## Changing the Source

### Parts Identification

[9] Source

### Changing the Source

Each time the button [9] is pressed, the source will change in the following sequence:

Built-in CD player → Tuner → OFF

- If there is no disc in the built-in CD player, the source will not change to "built-in CD player".

## Adjusting the Audio

### Parts Identification

[1] Volume/Audio adjustment  
[12] Shift  
[17] Loudness

### Mode Selection

Each press of button [12] changes the mode as follows:

Volume adjustment (VOL) → Balance adjustment (FAD/BAL) → Tone adjustment (BAS/TRE) → Loudness adjustment (LOUD)

- When you're adjusting fader, balance, bass or treble, the indicator will stop at the center setting. About 8 seconds after adjustment, the display returns to its previous state.

### Volume Adjustment

Pressing the (+) side of button [1] increases the volume, while the (-) side decreases it. (Display shows "VOL 00" ~ "VOL 30".)

- When driving your vehicle, be sure to keep the volume of the unit set low enough to allow you to hear sounds coming from outside.

### Balance Adjustment

Press button [12] to select balance adjustment mode. ("FAD" appears on the display.) Adjust the fader using the (+) or (-) side of button [1]. To adjust the balance, press either the (◀) or (▶) side of button [1] to turn on BAL.

### Fader

Press the (+) side of button [1] to raise the volume of the front speaker only. Press the (-) side of the button to raise the volume of the rear speaker only.

(Display shows "FAD F9" ~ "FAD R9".)

- Please set "FAD 0" when using 2 speaker system.

### Balance

Pressing the (◀) side of button [1] shifts the balance to the left speaker, while the (▶) side shifts it to the right speaker.

(Display shows "BAL L9" ~ "BAL R9".)

### Tone Adjustment

Press button [12] to select tone adjustment mode. ("BAS" appears.) Select the tone you wish to adjust using the (◀) or (▶) side of button [1]. Each press of the (▶) side changes the tone from BAS → TRE, while each press of the (◀) side changes the tone from TRE → BAS.

### Bass Adjustment

Select the Bass mode.

Pressing the (+) side of button [1] increases bass, while the (-) side decreases bass. (Display shows "BAS -6" ~ "BAS +6".)

### Treble Adjustment

Select Treble adjustment mode.

Pressing the (+) side of button [1] increases treble, while the (-) side decreases treble. (Display shows "TRE -6" ~ "TRE +6".)

### Loudness Adjustment

This "loudness" function enhances both the high and low ranges of sound to give even more power to output even at low volume.

Press button [12] to select loudness adjustment mode. (The "LOUD" indicator appears on the display.)

Pressing the (▶) side of button [1] turns the loudness function on (LOUD [17] light up), pressing the (◀) side turns it off.

## Using the Tuner

### Parts Identification

- [1] Tuning
- Seek/Manual
- Local Seek Sensitivity
- [4] Local mode
- [5] BSM/Preset Scan
- [6] FM Monaural
- [7] AF/REG
- [8] TA/EON
- [9] Source
- [10] Band
- [11] Preset
- [14] Preset Number
- [15] FM Stereo
- [16] Local mode
- [18] Manual
- [19] FM Monaural
- [20] REG
- [21] EON
- [22] TP
- [23] AF
- [24] TA
- [25] Frequency
- [26] Band

### Electronic Tuner

Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocations for Western Europe, Asia, the Middle and Near East, Africa, Australia and Oceania. Use in other areas may result in improper reception of AM. The RDS function does not work in regions with no RDS broadcast services.

### Listening to the Radio

1. Set the source to "tuner" by pressing button [9].
  - For details, refer to "Changing the Source" on page 1-4.
2. Select the band by pressing button [10]. Each time the button is pressed, the band will change in the following sequence:  
FM1 → FM2 → FM3 → MW/LW
  - MW and LW are combined in one band.
3. Use seek tuning or manual tuning to tune to a radio station.
  - 3-1. Set the tuning mode to "seek" or "manual" by pressing the (◀) and (▶) sides of button [1] simultaneously.  
Repeat this operation to switch to the other tuning mode. (When the manual tuning mode is set, "MANU" [18] will be displayed.)

- 3-2. Tune by Press (◀) or (▶) of button [1].  
(When there is a stereo broadcast, "○" [15] will be displayed.)

### Seek Tuning:

When the button is pressed, stations whose signal strength is above a certain level will be tuned automatically.

### Manual Tuning:

When the button is pressed, the frequency will change by one step up or down.

## Using the Preset Memory

The radio stations can be stored in memory under buttons 1 to 6 of [11].

1. Tune in to the station to be stored in memory.
2. Store the station in memory by pressing one of the buttons (1 to 6) for at least 2 seconds. When the [14] number stops blinking, the station will be stored in memory under the button pressed.
  - Up to 18 FM stations and 6 MW/LW stations can be stored in memory.

### Preset Tuning

The radio stations stored in memory can be recalled by pressing the respective button 1 to 6 of [11]. The station stored under that button will be recalled. (The number of the button pressed will be displayed at [14].)

## Using the Best Stations Memory (BSM)

The radio stations having a strong signal can be tuned automatically and stored in memory under buttons 1 to 6 [11]. Press button [5] for at least 2 seconds. (The "BSM" will blink.) After "BSM" stops blinking, the stations will be stored in memory under buttons 1 to 6 of [11].
 

- BSM can be canceled mid-operation by pressing button [5].
- The stations will be stored under buttons 1 to 6 in the order of their signal strength. The strongest station will be stored under button 1, followed by stations with lower signal strengths.
- If there are fewer than 6 stations whose signal is strong, there will be spare memory.
- It will take almost 30 seconds for BSM to be completed.

## Preset Scan Tuning

This recalls in sequence all the stations stored in memory under the buttons [11] for 8 seconds each. Press button [5]. (The [14] number will blink.) To cancel, press the button again. After the desired station is tuned, cancel the preset scan tuning. The station will then continue to be received.

- Stations stored in memory under the buttons [11] but whose signal is weak will not be recalled.

## Local Seek Tuning

When the local mode is set, the seek tuning's sensitivity level will become high and only stations with a strong signal will be seek tuned. The local mode's seek sensitivity can be adjusted.

## Setting the Local Mode

Press button [4]. (The "LOC.S" [16] will light.) To cancel the local mode, press the button again.

**Adjusting the Local Seek Sensitivity**

There are 4 local seek sensitivity steps for FM and 2 steps for MW/LW.

- LOC-4 is the highest seek tuning sensitivity level. Only the stations with a strong signal are tuned. LOC-3, LOC-2, and LOC-1 in descending order enables the tuning of stations with a respectively weaker signal.

1. Set to local seek sensitivity adjustment mode. Press button [4] for at least 2 seconds. (The current sensitivity level "LOC-2" will be displayed.)
  - The local seek sensitivity adjustment mode will be canceled after about 5 seconds.

2. Adjust the sensitivity level by pressing (◀) or (▶) of button [1].

**FM Monaural Reception**

If a stereo broadcast has a lot of noise, switching to the monaural reception mode will reduce the noise. Press button [6]. ("MONO" [19] will appear on the display.) To cancel, press the button again.

**Playing Compact Discs****Parts Identification**

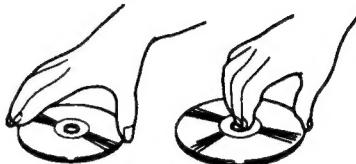
- [1] Track Number Search  
Fast Forward and Reverse
- [2] Eject
- [3] Disc Insertion Slot
- [9] Source
- [11] ① Pause  
② Repeat  
③ Random play
- [27] Manual
- [28] Playback time
- [29] Track number

**Discs**

- Only use compact discs (optical digital audio discs) bearing the mark shown below.



- Do not use cracked, scratched, or warped discs.
- Do not touch the disc's playing side. Handle the disc as shown below.



- Do not affix any label on the disc.
- Do not apply any vinyl record spray, anti-static agent, benzene, paint thinner, or any other volatile chemicals.

- Do not play a dirty disc. Use a soft cloth to clean a dirty disc as shown below. Wipe the disc outward from the center.



- Do not place the disc in high temperatures and direct sunlight.
- Be sure to store the disc in its case.

**CD Playing Environment**

- Disc playback may be interrupted by sudden road shock.
- When the air temperature is low and the car heater is turned on, condensation on the disc and internal parts of the unit may prevent proper playback operation. If this happens, turn off the unit and wait one hour until the condensation is gone. Also, use a soft cloth to wipe off any condensation from the disc.

**Listening to the CD Player**

1. With the label side up, insert a disc into [3]. Playback will start. (The track number [29] and playback time [28] will be displayed.)
  - Do not insert the disc with the label side down. Doing so may scratch the disc.
  - If the disc stops midway while it is being inserted or if there is no playback after a disc is inserted, something may be wrong with the disc. Eject the disc and check it.
2. Turn ON/OFF the disc playback. Press button [9] to change the source.
  - For details, refer to "Changing the Source".

3. Eject the disc by pressing button [2].

- Do not leave the disc halfway into the unit as shown below. Doing so may cause the disc to be bent or dropped.



### Using Track Number Search, Fast Forward and Reverse

1. Set the mode to "track number search" or "fast forward and reverse". Press the (◀) and (▶) sides of button [1] simultaneously. Each time this is repeated, the mode will switch between the track number search mode and fast forward and reverse mode. (When the fast forward and reverse mode is set, "MANU" [27] will light.)
2. Execute a track number search or fast forward and reverse by pressing (◀) and (▶) of button [1].
- Playback sound can be heard during fast forward and reverse.

### Pausing

The disc playback can be stopped temporarily by pressing ① of button [11]. (The "PAUSE" will be displayed.) To cancel the pause, press the button again.

### Repeat

1. To repeat the music you are listening to, press button ② of [11] ("RPT" will appear on the display).
2. To cancel music repeat, press button ② of [11] to turn off "RPT".

### Random Play

1. To play music randomly, press button ③ of [11] ("RDM" will appear on the display). Once the current track has been played, the microprocessor will randomly select the next and subsequent tracks.
2. To cancel random play, press button ③ of [11] to turn off "RDM".
- Since selections are played in random order, the same selection may be played twice in succession.

### Error Display

If there is a problem with CD playback, an error code will be displayed.  
(Ex.: "ERROR-10")

If an error is displayed, refer to the table below to identify the problem. If the error is displayed even after corrective action is taken, contact your dealer or the nearest authorized PIONEER Service Station.

#### D: Display

#### C: Cause

#### T: Treatment

D: ERROR-11, 12, 14, 17, 30

C: The disc is dirty.

T: Clean the disc.

D: ERROR-11, 12, 17, 30

C: The disc is scratched.

T: Replace the disc.

D: ERROR-11, 14, 17

C: The disc is inserted with the label side down.

T: Insert the disc with the label side up.

D: ERROR-14

C: An unrecorded CD-R is being used.

T: Check the disc.

#### D: Display

#### C: Cause

#### T: Treatment

D: ERROR-10, 11, 12, 14, 17, 30, A0

C: Electrical or mechanical fault.

T: Turn off the car's ignition and turn it back on again. Or change the source to another one and then change it back to CD.

#### D: HEAT

C: The CD player's internal temperature is high.

T: Wait until the CD player's internal temperature goes down.

### Additional Functions

#### Parts Identification

#### [12] Illumination

#### Switching Illumination Color

The illumination color can be set to amber or green.

Press button [12] for at least 2 seconds.

Repeat this operation to switch between amber and green.

## Connecting the Units

**Note:**

- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- To avoid shorts in the electrical system, be sure to disconnect the battery  $\ominus$  cable before beginning installation.
- After completing installation and wiring, double check that there are no mistakes. Re-install any parts removed from the car during installation, then connect the battery negative terminal.
- Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.
- Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.
- Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation and cause a very dangerous short.
- Do not shorten any leads. If you do, the protection circuit may fail to work when it should.
- Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing over heating.
- When replacing fuses, be sure to use only fuses of the rating prescribed on the fuse holder.
- Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker  $\ominus$  leads are common.
- Speakers connected to this unit must be high-power type possessing maximum input of at least 22 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.

- When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.
- When the unit is mounted in a vehicle whose ignition switch does not have the ACC (accessory) position as shown in Fig. 2, be sure to connect the red lead of the unit to the terminal controlled by the ignition switch ON/OFF position. If you do not, the vehicle battery may go flat when you leave your vehicle for several hours.  
(Fig. 1: ACC position/Fig. 2: No ACC position)

## Connection Diagram (Fig. 3)

1. Power amp (sold separately)
2. Connecting cords with RCA pin plugs (sold separately)
3. Blue
4. Front/left speaker
5. Front/right speaker
6. Green
7. Gray
8. Green/black
9. Gray/black
10. Rear/left speaker
11. Rear/right speaker
12. Green/red
13. Gray/red
14. Black/green
15. Black/gray
16. Connected only when the optional amplifier is used. Nothing is connected when operating the built-in amplifier itself.
17. White
18. Red
19. Rear out
20. Front out (DEH-605RDS, DEH-405 and DEH-405SDK do not have this terminal.)
21. Antenna jack
22. Blue  
To system control terminal of the power amp or Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
23. Fuse holder
24. Fuse resistor
25. Black (ground)  
To vehicle (metal) body.
26. Orange  
To terminal always supplied with power regardless of ignition switch position.
27. Red  
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.



Fig.1

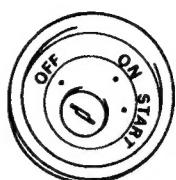


Fig.2

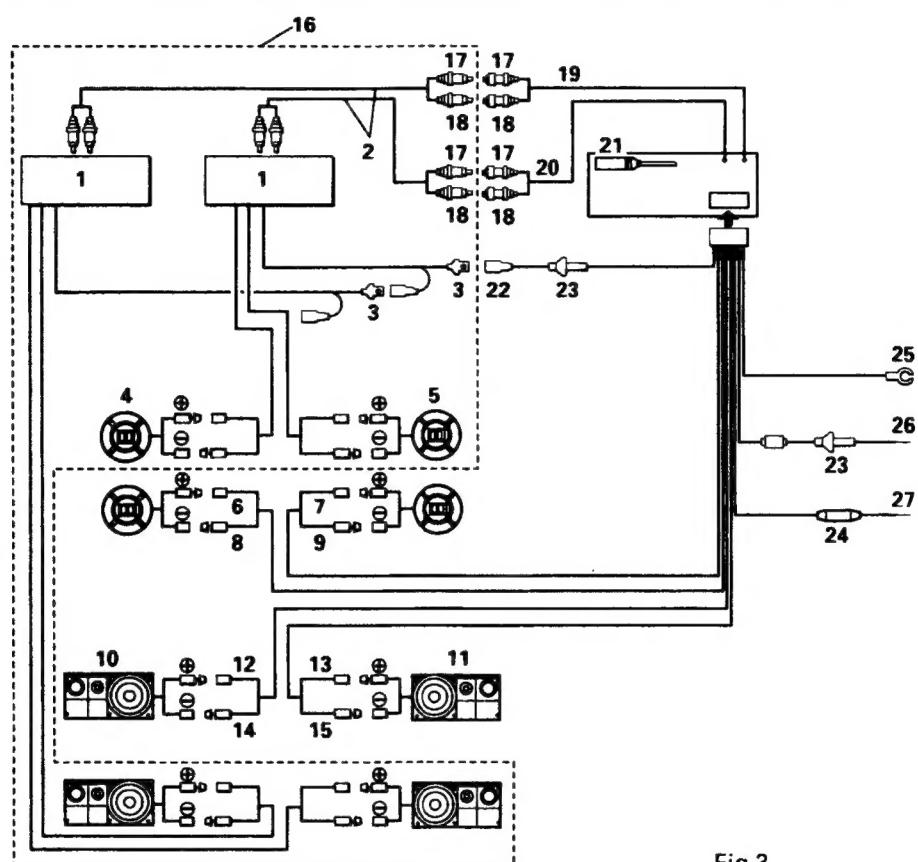


Fig.3

### 3. DISASSEMBLY

#### ● Removing the Case

1. Remove the three screws.
2. Insert and turn a flat screwdriver at locations indicated by arrows to remove the case.

#### ● Removing the Detach Grille Assy

1. Press the detach button, and then pull detach grille Assy.

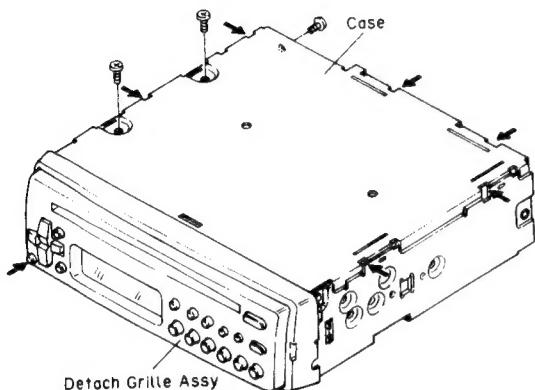


Fig.4

#### ● Removing the Chassis Unit

1. Remove the two screws C.
2. Remove the screw D and E.
3. Remove the screw F and then remove the holder.
4. Stretch the four claws.
5. Remove the chassis Unit

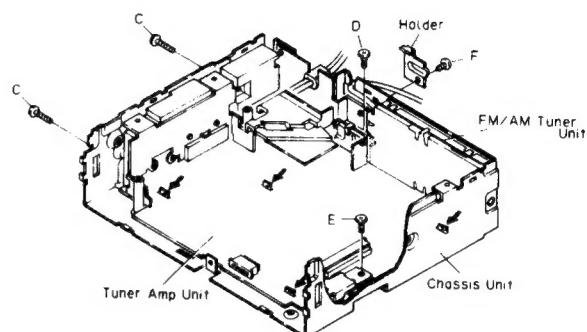


Fig.6

#### ● Removing the Panel Unit

1. Remove the screw B and disconnect the two stoppers indicated by arrows.
2. Disconnect the connector.

#### ● Removing the CD Mechanism Module

1. Remove the four screws A.
2. Disconnect the connector.
3. Remove the CD Mechanism Module.

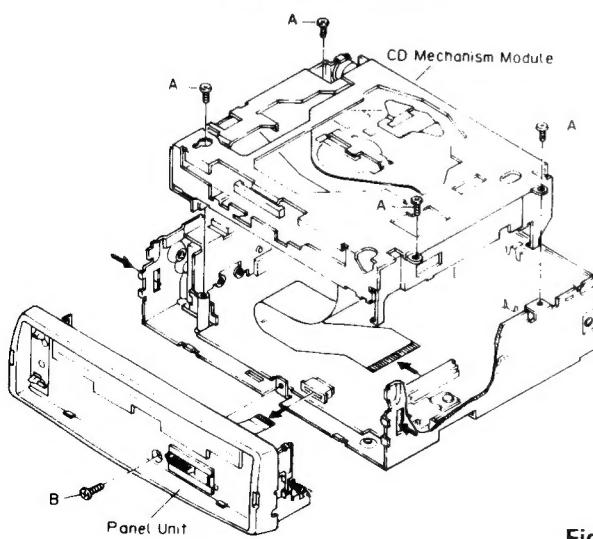
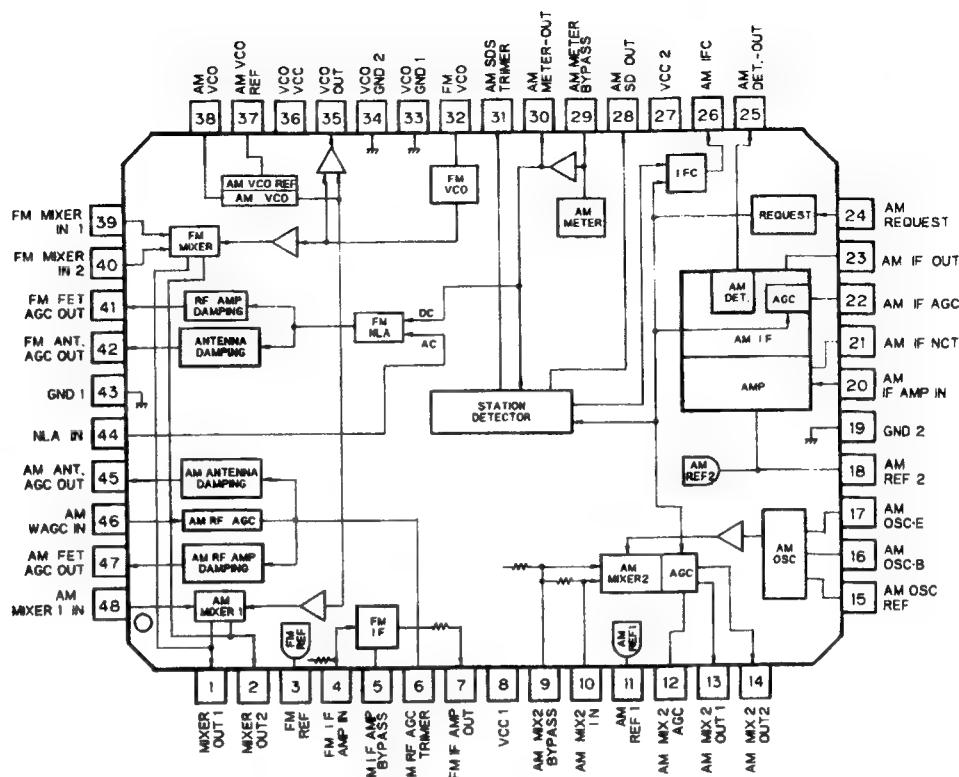


Fig.5

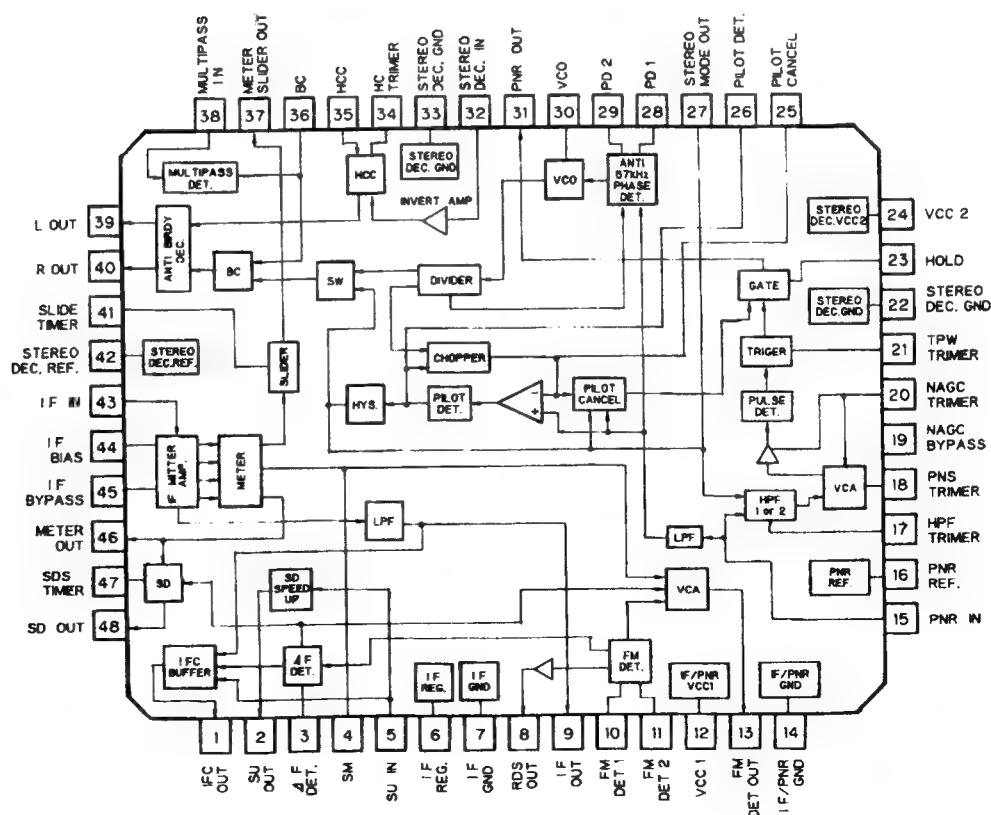
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● ICs

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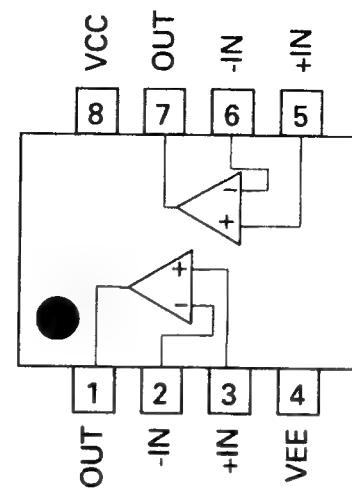
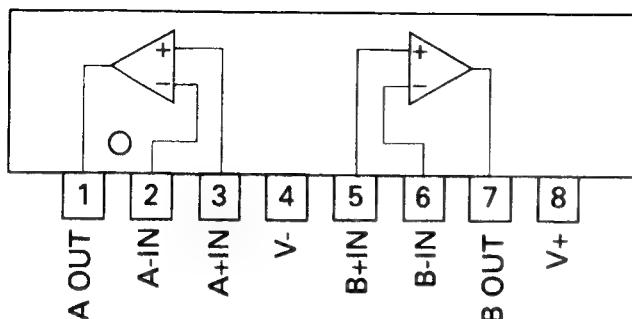
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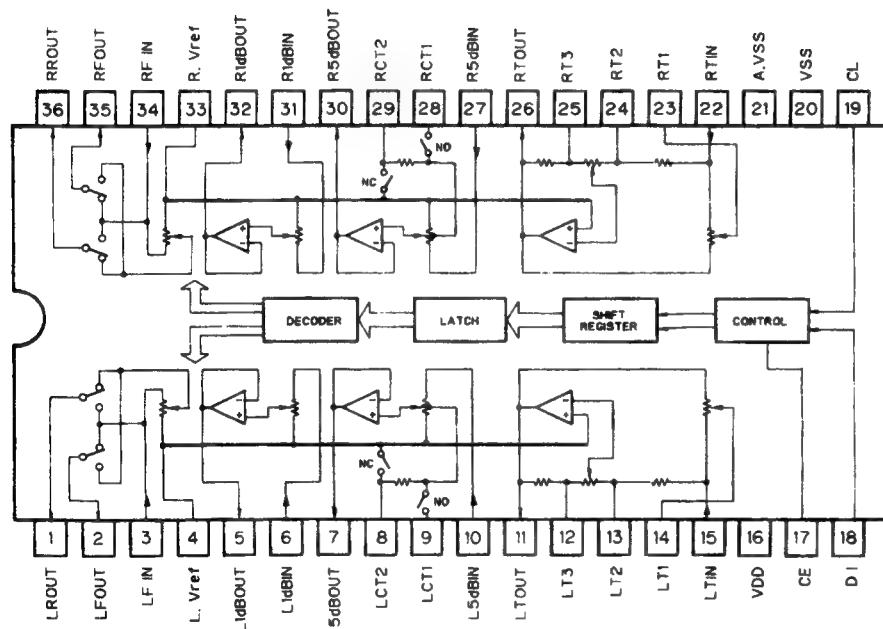
# DEH-605RDS, 505SDK, 505, 405SDK, 405

NJM4558L

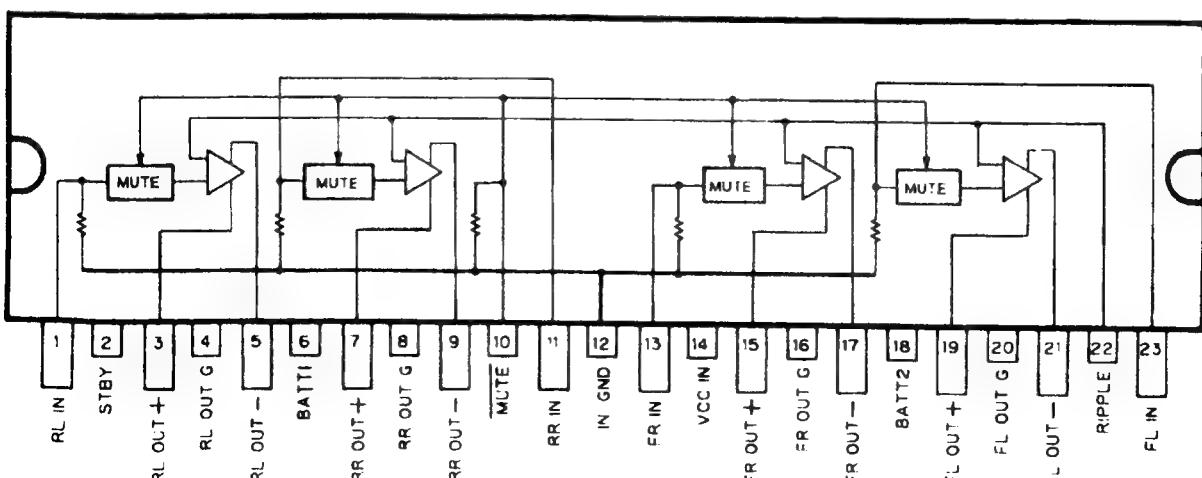
NJM4558MD



\*LC7538JMHS



PA3029A



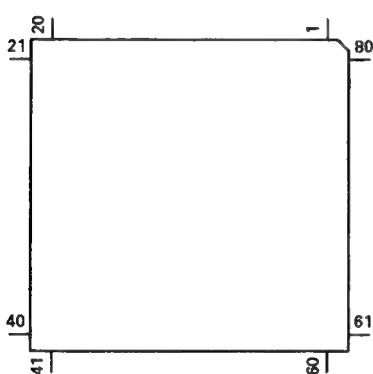
## ● Pin Functions(PDR009B)

| Pin No. | Pin Name | I/O | Output Format | Function and Operation                                |
|---------|----------|-----|---------------|---|
| 1-3     | KD3-KD1  | I   |               | Analog key input                                      |
| 4       | AVSS     | I   |               | A/D converter GND                                     |
| 5,6     | NC       |     |               | Not used  |
| 7       | AVREF1   | I   |               | D/A converter reference voltage                       |
| 8       | LCE      | O   |               | Chip enable output for LCD driver                     |
| 9       | LDT      | O   | C             | Data output for LCD driver                            |
| 10      | RST      | O   | C             | LSI reset output                                      |
| 11,12   | NC       |     |               | Not used  |
| 13      | SK       | I   |               | SK signal input                                       |
| 14      | XAO      | O   |               | Control signal distinguishing data from microcomputer |
| 15      | XSTB     | O   | C             | LSI data output                                       |
| 16      | XSI      | I   |               | LSI data input  |
| 17      | XSO      | O   | C             | LSI data output                                       |
| 18      | XSCK     | O   | C             | LSI clock output                                      |
| 19      | CONT     | O   | C             | Servo driver power supply control                     |
| 20      | LOAD     | O   | C             | Loading motor LOAD control                            |
| 21      | EJET     | O   | C             | Loading motor EJECT control                           |
| 22      | CD5VON   | O   | C             | CD +5V control  |
| 23      | NC       |     |               | Not used  |
| 24      | CDMUTE   | O   | C             | CD mute output  |
| 25      | TMUTE    | O   | C             | Tuner mute output                                     |
| 26      | VDCONT   | O   | C             | VD control input                                      |
| 27      | FOK      | I   |               | FOK signal input                                      |
| 28      | MIRR     | I   |               | Mirror detector input                                 |
| 29      | LOCK     | I   |               | Spindle lock detector input                           |
| 30      | CLAMP    | I   |               | Disc clamp sense input                                |
| 31      | HOME     | I   | C             | Home position detector input                          |
| 32      | FECNT    | O   | C             | FE output control pin                                 |
| 33      | VSS      |     |               | GND   |
| 34      | VDSENS   | I   |               | VD over voltage sense input                           |
| 35      | VMC      | O   | C             | Loading motor driver power supply                     |
| 36      | NC       |     |               | Not used  |
| 37      | ADENA    | O   | N             | A/D converter reference voltage output                |
| 38      | NC       |     |               | Not used  |
| 39      | CDPW     | O   | N             | CD power control                                      |
| 40      | LCK      | O   |               | Clock output for LCD driver                           |
| 41      | SYSPW    | O   | C             | System power supply control output                    |
| 42      | BLGTA    | O   | C             | LCD back light amber control output                   |
| 43      | BLGTG    | O   | C             | LCD back light green control output                   |
| 44      | SWVDD    | O   | C             | Key board unit power supply control output            |
| 45      | PEE      | O   | C             | Beep tone output                                      |
| 46      | VDT      | O   | C             | Data output for electronic volume                     |
| 47      | VST      | O   | C             | Strobe pulse output for electronic volume             |
| 48      | VCK      | O   | C             | Clock output for electronic volume                    |
| 49      | PCL      | O   | C             | Clock adjustment output                               |
| 50      | FM/AM    | O   | C             | FM/AM power select output                             |
| 51      | MONO     | O   | C             | Forced mono output                                    |
| 52-55   | SIMK0-3  | I   |               | Model select input                                    |
| 56      | MUTE     | O   | C             | Mute output   |
| 57      | NC       |     |               | Not used  |
| 58      | DK       | I   |               | DK signal input                                       |
| 59      | SD       | I   |               | SD input  |
| 60      | RESET    | I   |               | Reset input   |
| 61      | REMINT   | I   |               | Remote control signal input                           |
| 62      | BSENS    | I   |               | Back up power sense input                             |
| 63      | ASENS    | I   |               | ACC power sense input                                 |
| 64      | PDI      | I   |               | PLL data input  |

# DEH-605RDS, 505SDK, 505, 405SDK, 405

| Pin No. | Pin Name | I/O | Output Format | Function and Operation                            |
|---------|----------|-----|---------------|---|
| 65      | PDO      | O   | C             | Data output for PLL IC                            |
| 66      | PCK      | O   | C             | Serial clock output for PLL IC                    |
| 67      | PCE      | O   | C             | Chip enable output for PLL IC                     |
| 68      | VDD      |     |               | Power supply                                      |
| 69,70   | X2,X1    |     |               | Crystal oscillator connection pin                 |
| 71      | IC       |     |               | Connect to GND                                    |
| 72      | XT2      |     |               | Not used  |
| 73      | TESTIN   | I   |               | Test program start input                          |
| 74      | AVDD     |     |               | Positive power supply terminal for analog circuit |
| 75      | AVREF0   | I   |               | A/D converter reference voltage                   |
| 76      | SL       | I   |               | SD level input from tuner                         |
| 77      | TEMP     | I   |               | Temperature detector                              |
| 78      | DINC     | I   |               | Disc insert sense input                           |
| 79      | EJTD     | I   |               | Disc eject position sense input                   |
| 80      | KD0      | I   |               | Analog key input                                  |

\*PDR009B

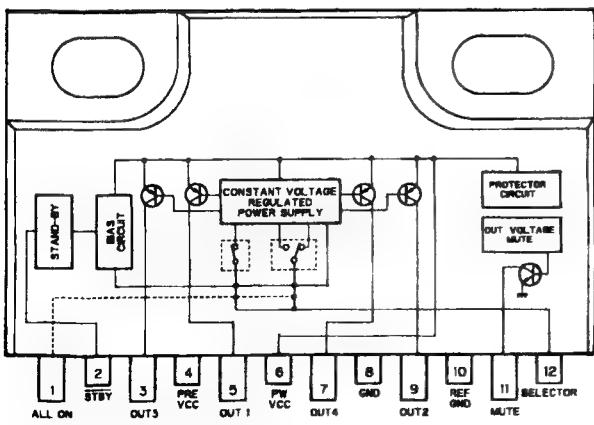


| Output Format | Meaning              |
|---------------|----------------------|
| C             | CMOS                 |
| N             | N channel open drain |

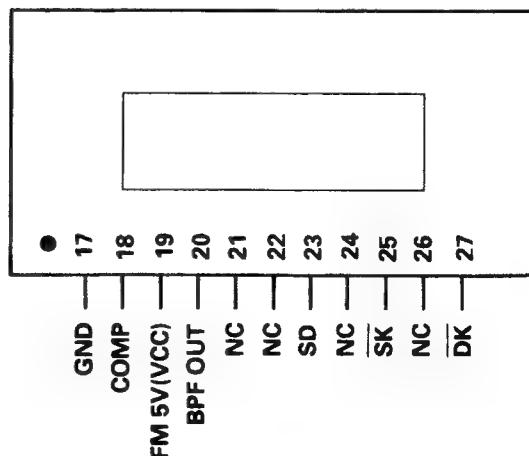
IC's marked by \* are MOS type.

Be careful in handing them because they are very liable to be damaged by electrostatic induction.

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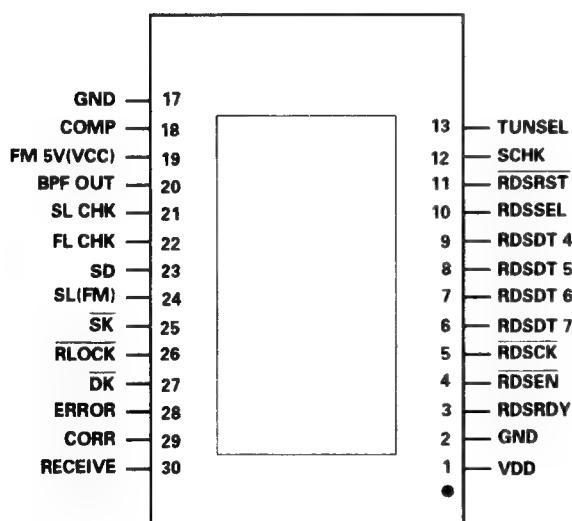
CWV1045



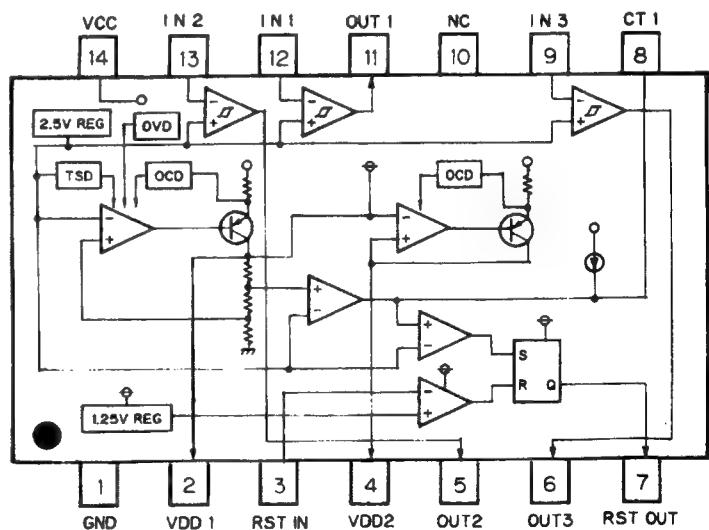
● Pin Functions (CWV1044)

| Pin No. | Pin Name   | I/O | Function and Operation                    |
|---------|------------|-----|---|
| 1       | VDD        |     | Power supply for RDS controller           |
| 2       | GND        |     | GND                                       |
| 3       | RDSRDY     | I   | Ready input from system control IC        |
| 4       | RDSEN      | O   | Enable output for system control IC       |
| 5       | RDSCK      | I   | Serial clock input from system control IC |
| 6-9     | RDSDT 7-4  | I/O | Data input/output to system control IC    |
| 10      | RDSSEL     | I   | Select input from system control IC       |
| 11      | RDSRST     | I   | Reset input from system control IC        |
| 12      | SCHK       | I   | Unit check input                          |
| 13      | TUNSEL     | I   | FM/AM tuner unit select input             |
| 14-16   | VACANT     |     |   |
| 17      | GND        |     | GND                                       |
| 18      | COMP       | I   | FM composite signal input                 |
| 19      | FM 5V(VCC) |     | Power supply decoder                      |
| 20      | BPF OUT    | O   | Band pass filter test output              |
| 21      | SL CHK     | O   | SL check output                           |
| 22      | FL CHK     | O   | FL check output                           |
| 23      | SD         | I   | RDS decode control input                  |
| 24      | SL(FM)     | I   | Signal level input from tuner             |
| 25      | SK         | I   | SK signal detect input                    |
| 26      | RLOCK      | O   | RDS test output                           |
| 27      | DK         | O   | DK signal detect output                   |
| 28      | ERROR      | O   | Disapprove of error correction output     |
| 29      | CORR       | O   | Error output                              |
| 30      | RECEIVE    | O   | RDS synchronizing test output             |

CWV1044



PAJ001A

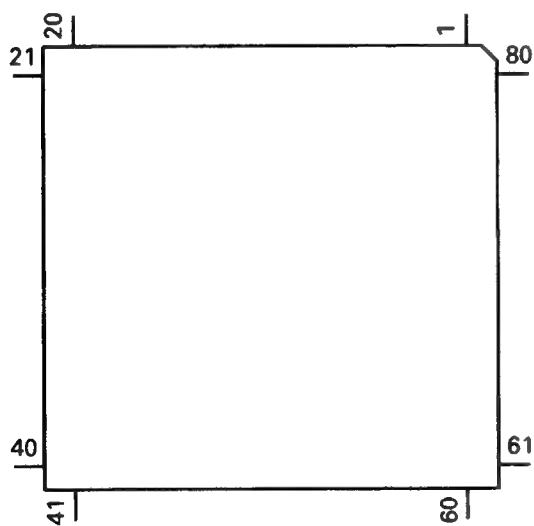


**● Pin Functions(PD4483B)**

| Pin No. | Pin Name | I/O | Output Format | Function and Operation                                |
|---------|----------|-----|---------------|---|
| 1       | NC       | I   |               | Not used  |
| 2       | RDSRST   | O   | C             | Reset output for RDS IC                               |
| 3       | RDSSEL   | O   | C             | Select output for RDS IC                              |
| 4       | AVSS     | I   |               | A/D converter GND                                     |
| 5       | RDSEN    | O   | C             | Enable output for RDS IC                              |
| 6       | RDSRDY   | I   |               | Ready input from RDS IC                               |
| 7       | AVREF1   | I   |               | D/A converter reference voltage                       |
| 8       | KYDT     | I   |               | Key data input  |
| 9       | DPDT     | O   | C             | Display data output                                   |
| 10      | RST      | O   | C             | LSI reset output                                      |
| 11      | RDSDI    | I   |               | Serial data input for RDS IC                          |
| 12      | RDSDO    | O   | C             | Serial data output for RDS IC                         |
| 13      | RDSCK    | O   | C             | Serial clock output for RDS IC                        |
| 14      | XAO      | O   |               | Control signal distinguishing data from microcomputer |
| 15      | XSTB     | O   | C             | LSI strobe output                                     |
| 16      | XSI      | I   |               | LSI data input  |
| 17      | XSO      | O   | C             | LSI data output                                       |
| 18      | XSCR     | O   | C             | LSI clock output                                      |
| 19      | CONT     | O   | C             | Servo driver power supply control                     |
| 20      | LOAD     | O   | C             | Loading motor LOAD control                            |
| 21      | EJET     | O   | C             | Loading motor EJECT control                           |
| 22      | CD5VON   | O   | C             | CD +5V control  |
| 23      | NC       |     |               | Not used  |
| 24      | CDMUTE   | O   | C             | CD mute output  |
| 25      | TMUTE    | O   | C             | Tuner mute output                                     |
| 26      | VDCONT   | O   | C             | VD control input                                      |
| 27      | FOK      | I   |               | FOK signal input                                      |
| 28      | MIRR     | I   |               | Mirror detector input                                 |
| 29      | LOCK     | I   |               | Spindle lock detector input                           |
| 30      | CLAMP    | I   |               | Disc clamp sense input                                |
| 31      | HOME     | I   | C             | Home position detector input                          |
| 32      | FECNT    | O   | C             | FE output control pin                                 |
| 33      | VSS      |     |               | GND   |
| 34      | VDSENS   | I   |               | VD over voltage sense input                           |
| 35      | VMC      | O   | C             | Loading motor driver power supply                     |
| 36      | NC       |     |               | Not used  |
| 37      | ADENA    | O   | N             | A/D converter reference voltage output                |
| 38      | NC       |     |               | Not used  |
| 39      | CDPW     | O   | N             | CD power control                                      |
| 40      | NC       |     |               | Not used  |
| 41      | SYSPW    | O   | C             | System power supply control output                    |
| 42      | BLGT     | O   | C             | LCD back light control output                         |
| 43      | VLCDPW   | O   | C             | Power supply control output for LCD                   |
| 44      | SWVDD    | O   | C             | Key board unit power supply control output            |
| 45      | PEE      | O   | C             | Beep tone output                                      |
| 46      | VDT      | O   | C             | Data output for electronic volume                     |
| 47      | VST      | O   | C             | Strobe pulse output for electronic volume             |
| 48      | VCK      | O   | C             | Clock output for electronic volume                    |
| 49      | PCL      | O   | C             | Clock adjustment output                               |
| 50      | FM/AM    | O   | C             | FM/AM power select output                             |
| 51      | MONO     | O   | C             | Forced mono output                                    |
| 52-55   | NC       |     |               | Not used  |
| 56      | MUTE     | O   | C             | Mute output   |
| 57      | NC       |     |               | Not used  |
| 58      | NC       |     |               | Not used  |
| 59      | SD       | I   |               | SD input  |
| 60      | RESET    | I   |               | Reset input   |

| Pin No. | Pin Name | I/O | Output Format | Function and Operation                            |
|---------|----------|-----|---------------|---|
| 61      | NC       |     |               | Not used  |
| 62      | BSENS    | I   |               | Back up power sense input                         |
| 63      | ASENS    | I   |               | ACC power sense input                             |
| 64      | PDI      | I   |               | PLL data input                                    |
| 65      | PDO      | O   | C             | Data output for PLL IC                            |
| 66      | PCK      | O   | C             | Serial clock output for PLL IC                    |
| 67      | PCE      | O   | C             | Chip enable output for PLL IC                     |
| 68      | VDD      |     |               | Power supply                                      |
| 69,70   | X2,X1    |     |               | Crystal oscillator connection pin                 |
| 71      | IC       |     |               | Connect to GND                                    |
| 72      | XT2      |     |               | Not used  |
| 73      | TESTIN   | I   |               | Test program start input                          |
| 74      | AVDD     |     |               | Positive power supply terminal for analog circuit |
| 75      | AVREF0   | I   |               | A/D converter reference voltage                   |
| 76      | SL       | I   |               | SD level input from tuner                         |
| 77      | TEMP     | I   |               | Temperature detector                              |
| 78      | DINC     | I   |               | Disc insert sense input                           |
| 79      | EJTD     | I   |               | Disc eject position sense input                   |
| 80      | DSENS    | I   |               | Grille detach sense                               |

\*PD4483B



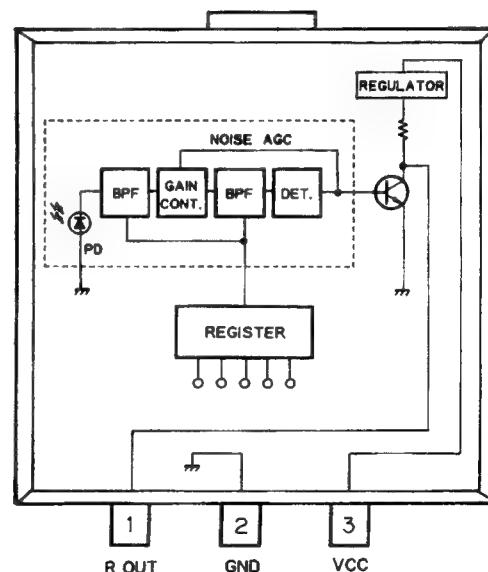
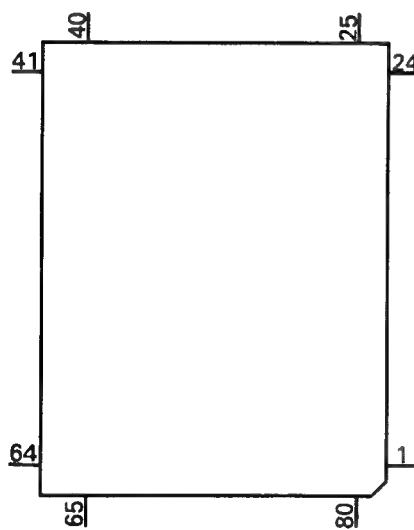
| Output Format | Meaning              |
|---------------|----------------------|
| C             | CMOS                 |
| N             | N channel open drain |

● Pin Functions (PD6122A)

| Pin No. | Pin Name | I/O | Function and Operation            |
|---------|----------|-----|-----------------------------------|
| 1       | VSS      |     | GND                               |
| 2       | X1       |     | Crystal oscillator connection pin |
| 3       | X0       |     | Crystal oscillator connection pin |
| 4       | RESET    | I   | Reset Input                       |
| 5,6     | MOD1,0   | I   | Model select input                |
| 7       | DILMX    | O   | Function LED select output        |
| 8       | KYDT     | O   | Key data output                   |
| 9       | DPDT     | I   | Display data input                |
| 10      | REMIN    | I   | Remote control pulse input        |
| 11      | SILMO    | O   | Illumination color select output  |
| 12      | SILMG    | O   | Function LED select output        |
| 13-16   | KD4-KD1  | I   | Key sense input                   |
| 17-22   | KDT6-T   | O   | Key strobe output                 |
| 23      | VDD      |     | 5V                                |
| 24-34   | NC       |     | Not used                          |
| 35-73   | SEG38-0  |     | LCD segment output                |
| 74-77   | COM3-0   | O   | LCD common output                 |
| 78-80   | VLCD-V1  |     | Power supply terminal             |

\*PD6122A

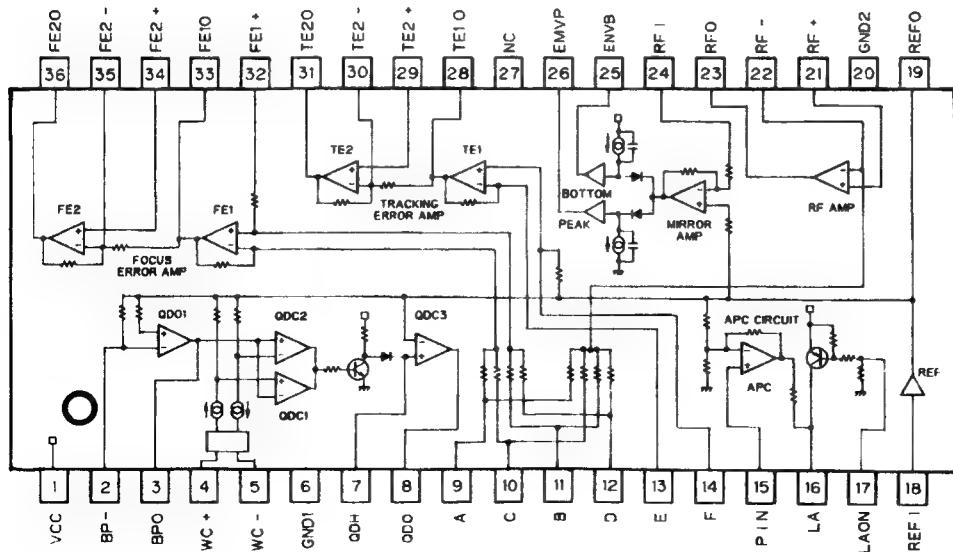
\*RPM-678CBR



## ● Pin Functions(UPC2571GS)

| Pin No. | Pin Name | I/O | Function and Operation                         |
|---------|----------|-----|--|
| 1       | VCC      |     | VCC  |
| 2       | BP-      | I   | TE zero cross amplifier input                  |
| 3       | BPO      | O   | TE zero cross amplifier output                 |
| 4       | WC+      |     | Not used                                       |
| 5       | WC-      |     | Not used                                       |
| 6       | GND1     |     | GND  |
| 7       | QDH      |     | Not used                                       |
| 8       | QDO      |     | Not used                                       |
| 9       | A        | I   | A signal input                                 |
| 10      | C        | I   | C signal input                                 |
| 11      | B        | I   | B signal input                                 |
| 12      | D        | I   | D signal input                                 |
| 13      | E        | I   | E signal input                                 |
| 14      | F        | I   | F signal input                                 |
| 15      | PIN      | I   | APC amplifier input                            |
| 16      | LA       | O   | APC amplifier output                           |
| 17      | LAON     |     | APC amplifier ON/OFF switching                 |
| 18      | REFI     | I   | Reference voltage input                        |
| 19      | REFO     | O   | Reference voltage output                       |
| 20      | GND2     |     | GND  |
| 21      | RF+      | I   | RF amplifier non-inverting input               |
| 22      | RF-      | I   | RF amplifier inverting input                   |
| 23      | RFO      | O   | RF amplifier output                            |
| 24      | RF1      |     | Not used                                       |
| 25      | ENVB     |     | Not used                                       |
| 26      | ENBP     |     | Not used                                       |
| 27      | NC       |     | Non connection                                 |
| 28      | TE1O     | O   | Tracking error amplifier 1 output              |
| 29      | TE2+     | I   | Tracking error amplifier 2 non-inverting input |
| 30      | TE2-     | I   | Tracking error amplifier 2 inverting input     |
| 31      | TE2O     | O   | Tracking error amplifier 2 output              |
| 32      | FE1+     | I   | Focus error amplifier 1 non-inverting input    |
| 33      | FE1O     | O   | Focus error amplifier 1 output                 |
| 34      | FE2+     | I   | Focus error amplifier 2 non-inverting input    |
| 35      | FE2-     | I   | Focus error amplifier 2 inverter input         |
| 36      | FE2O     | O   | Focus error amplifier 2 output                 |

UPC2571GS

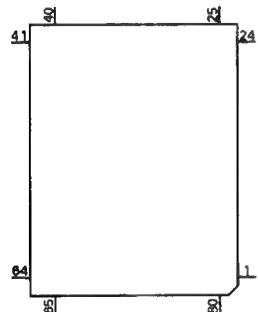


**● Pin Functions(UPD63700GF)**

| Pin No. | Pin Name  | I/O | Function and Operation  |
|---------|-----------|-----|---|
| 1       | D.GND     |     | Logic circuit GND   |
| 2       | RFOK      | O   | RFOK detection signal output terminal   |
| 3       | MIRR      | O   | MIRR detection signal output terminal   |
| 4       | TBC       | I   | Tracking filter bank switching terminal   |
| 5       | HOLD      | I   | Hold control signal input terminal  |
| 6       | D.VDD     |     | VDD for logic circuit   |
| 7       | RST       | I   | System reset  |
| 8       | AO        | I   | Control signal distinguishing data from microcomputer                                       |
| 9       | STB       | I   | Signal latching serial data inside LSI  |
| 10      | SCK       | I   | Clock input terminal for serial data input and output                                       |
| 11      | SO        | O   | Serial data and status signal output  |
| 12      | SI        | I   | Serial data input   |
| 13      | TM2       | I   | Double speed playback control terminal  |
| 14      | D.GND     |     | Logic circuit GND   |
| 15      | TEST      | I   | Test terminal   |
| 16      | STBY      | I   | Stand-by input terminal   |
| 17      | CTLV      | I   | Control terminal for clock generation VCO used by digital PLL in double speed playback mode |
| 18      | POUT      | O   | Output terminal for phase comparison between EFM signal and bit clock                       |
| 19      | D.GND     |     | Logic circuit GND   |
| 20      | VCO       | I   | Inverter input  |
| 21      | VCO       | O   | Inverter output   |
| 22      | D.VDD     |     | VDD for logic circuit   |
| 23      | PLCK      | O   | Bit clock monitor terminal  |
| 24      | LOCK      | O   | "H" when synchronization signal and frame counter output coincide at EFM demodulator        |
| 25      | WFCK      | O   | Signal insuring one-frame period by bit clock dividing signal                               |
| 26      | RFCK      | O   | Oscillation clock divider signal, output pin for signal giving 1-frame sync.                |
| 27      | C4M       | O   | Output terminal for signal having four the frequency of LRCK                                |
| 28      | C16M      | O   | Oscillation clock output terminal   |
| 29      | D.GND     |     | Logic circuit GND   |
| 30      | XTAL      | I   | Oscillation continuation terminal   |
| 31      | XTAL      | O   | Oscillation continuation terminal   |
| 32      | D.VDD     |     | VDD for logic circuit   |
| 33      | SCKO      | O   | Clock output terminal for audio serial data   |
| 34      | LRCK      | O   | Signal distinguishing between left and right channel DOUT terminal output                   |
| 35      | DOUT      | O   | Serial audio data output terminal   |
| 36      | TX        | O   | Digital audio interface data output terminal  |
| 37      | FLAG      | O   | Flag signal indicating that the current audio data output of incorrectable data             |
| 38      | EMPH      | O   | Emphasis information output   |
| 39      | WDCK      | O   | Output terminal for signal having double the frequency of LRCK                              |
| 40      | C2D3      | O   | Output terminal indicating C2 error correction status                                       |
| 41      | SFSY      | O   | Signal indicating subcode one-frame synchronization   |
| 42      | SBSY      | O   | Signal indicating head of subcode block   |
| 43      | SBSO      | O   | Subcode data output terminal  |
| 44      | SBCK      | I   | Subcode data read clock input terminal  |
| 45      | D.GND     |     | Logic circuit GND   |
| 46,47   | C1D1,C1D2 | O   | Output terminal indicating C1 error correction status                                       |
| 48,49   | C2D1,C2D2 | O   | Output terminal indicating C2 error correction status                                       |
| 50      | T4        | I   | Selects between focus and tracking modulation mode  |
| 51      | T5        | I   | Selects motor PWM output mode   |
| 52      | T6        | I   | Sets focus PWM output mode  |
| 53      | T7        | I   | Sets tracking PWM output mode   |
| 54      | D.VDD     |     | VDD for logic circuit   |
| 55      | MRD       | O   | PWM negative output terminal for the spindle loop filter                                    |
| 56      | MFD       | O   | PWM positive output terminal for the spindle loop filter                                    |
| 57      | SRD       | O   | PWM negative output terminal for the thread loop filter                                     |
| 58      | SFD       | O   | PWM positive output terminal for the thread loop filter                                     |

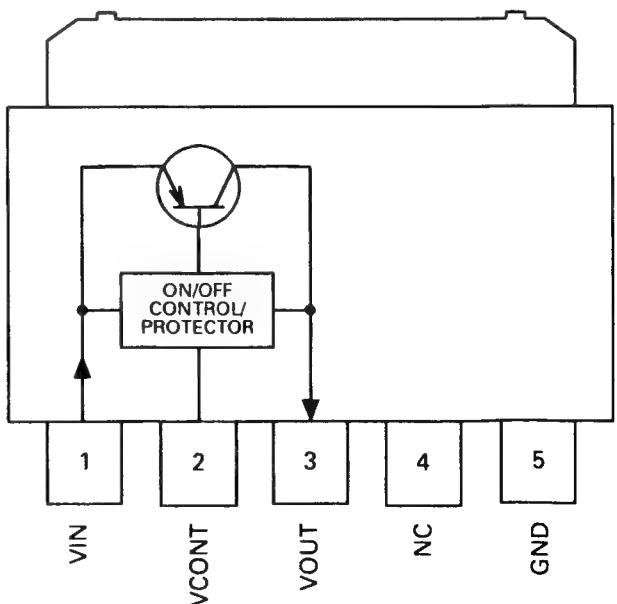
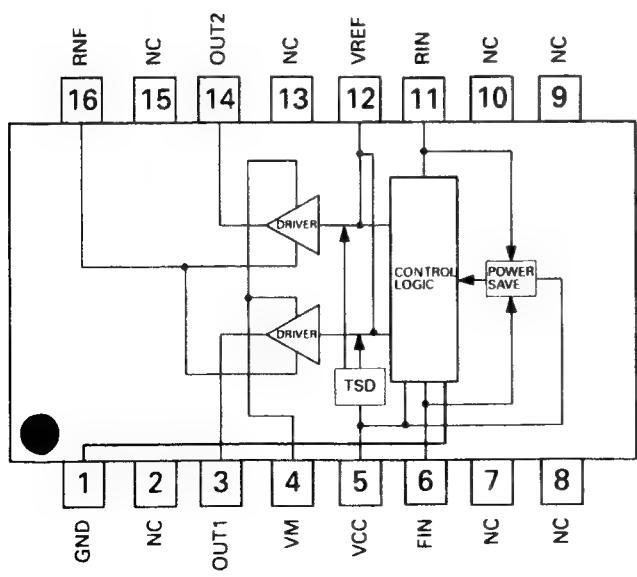
| Pin No. | Pin Name | I/O | Function and Operation                                    |
|---------|----------|-----|---|
| 59      | D.GND    |     | Logic circuit GND   |
| 60      | TRD      | O   | PWM negative output terminal for the tracking loop filter |
| 61      | TFD      | O   | PWM positive output terminal for the tracking loop filter |
| 62      | FRD      | O   | PWM negative output terminal for the focus loop filter    |
| 63      | FFD      | O   | PWM positive output terminal for the focus loop filter    |
| 64      | D.VDD    |     | VDD for logic circuit                                     |
| 65      | OUTSEL   | I   | Sets PWM output mode for the motor system                 |
| 66      | TEC1     | I   | Tracking error input terminal                             |
| 67      | TEC0     | I   | Tracking error input terminal                             |
| 68      | A.VDD    |     | VDD for analog circuit                                    |
| 69,70   | VR2,VR1  | I   | A/D converter input                                       |
| 71      | TE       | I   | Tracking error input terminal                             |
| 72      | FE       | I   | Focus error input terminal                                |
| 73      | RFB      | I   | RFB signal input terminal                                 |
| 74      | RFP      | I   | RFP signal input terminal                                 |
| 75      | A.GND    |     | Analog circuit GND  |
| 76      | REFOUT   | O   | A/D converter midpoint voltage output terminal inside LSI |
| 77      | RFI      | I   | RF signal input terminal for EFM comparator               |
| 78      | ASI      | I   | Level comparing input for RF signal comparison            |
| 79      | EFM      | O   | EFM signal output terminal                                |
| 80      | A.VDD    |     | VDD for analog circuit                                    |

\*UPD63700GF



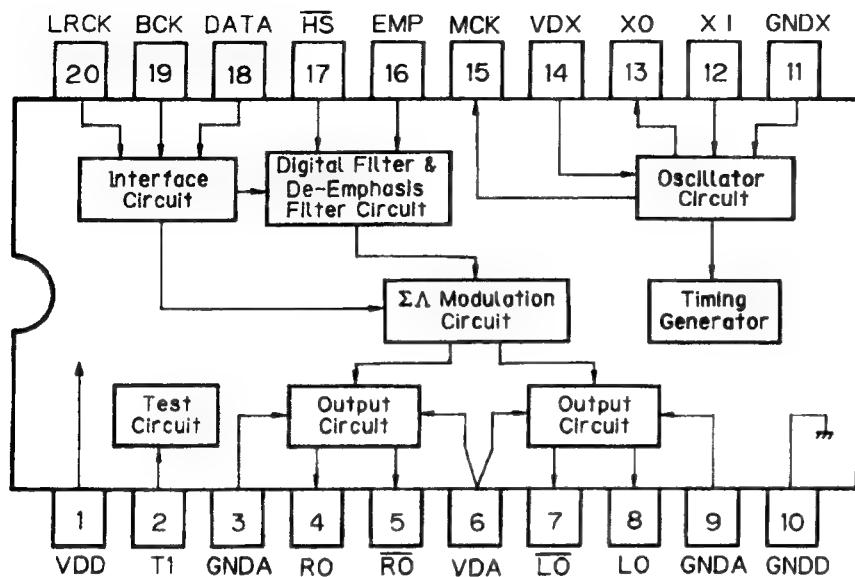
PQ05TZ51

XRA6285FP

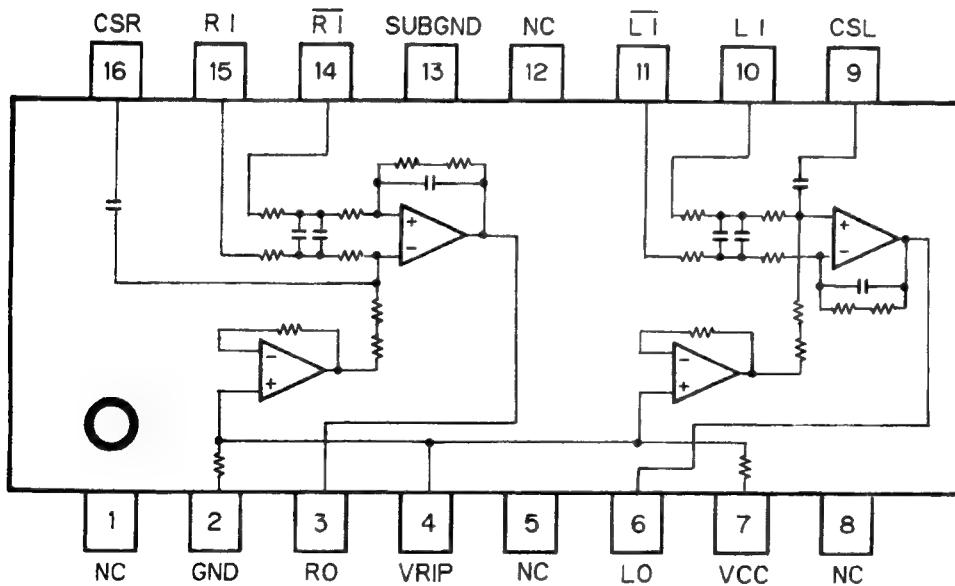


# DEH-605RDS, 505SDK, 505, 405SDK, 405

\*TC9268F



TA2063F



## 4. ADJUSTMENT

### 4.1 CD PLAYER SECTION

#### 1)Precautions

· This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.

If REFO and GND are connected to each other by mistake during adjustments,not only will it be impossible to measure the potential correctly,but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this,take special note of the following.

Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.

Since the frame of the measuring instrument is usually at the same potential as the negative probe,change the frame of the measuring instrument to floating status.

If by accident REFO comes in contact with GND,immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON,let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode,be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.
- Test mode starting procedure  
Switch ACC,back-up ON while pressing the **4** and **6** keys together.

· Test mode cancellation  
Switch ACC,back-up OFF.

· Disc detection during loading and eject operations is performed by means of a photo transistor in this unit.Consequently,if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment,the following malfunctions may occur.

\*During PLAY, even if the eject button is pressed,the disc will not be ejected and the unit will remain in the PLAY mode.

\*The unit will not load a disc.

When the unit malfunctions this way,either re-position the light source,move the unit or cover the photo transistor.

· When loading and unloading discs during adjustment procedures,always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

· Turn power off when pressing the button **TR+** or the button **TR-** key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

· SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released.Tracking is closed the moment C-MOVE is released.

· JUMP MODE resets to SINGLE as soon as power is switched off.

● Flow Chart

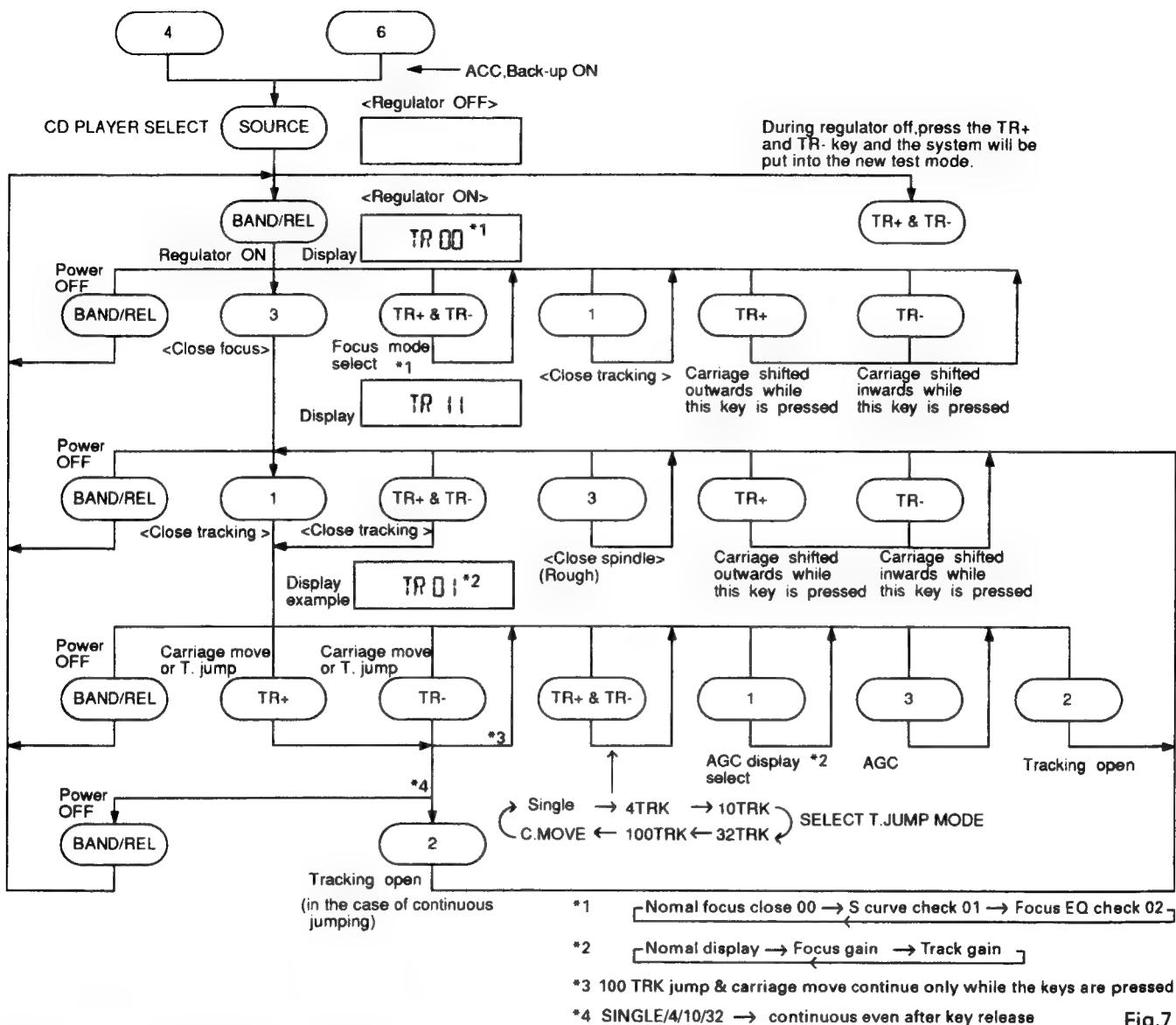


Fig.7

● Measuring Equipment and Jigs

| Adjustment                           | Measuring equipment & jigs   |
|--------------------------------------|--|
| 1 Tracking Error Offset Adjustment 1 | DC V Meter   |
| 2 Grating Check / Adjustment 1       | Oscilloscope, ABEX TCD-784, L.P.F., Clock Driver   |
| 3 Grating Adjustment 2               | Oscilloscope, Grating Adjustment Filter (B.P.F.), mV Meter, ABEX TCD-784, L.P.F., Clock Driver |
| 4 Tracking Balance Adjustment 1      | Oscilloscope, Low-pass Filter, ABEX TCD-784  |
| 5 Focus Bias Adjustment              | Oscilloscope, ABEX TCD-784   |
| 6 RFO Offset Adjustment              | Oscilloscope, ABEX TCD-784   |
| 7 Tracking Error Offset Adjustment 2 | DC V Meter   |
| 8 Tracking Balance Adjustment 2      | Oscilloscope, Low-pass Filter, ABEX TCD-784  |

● Adjustment Point

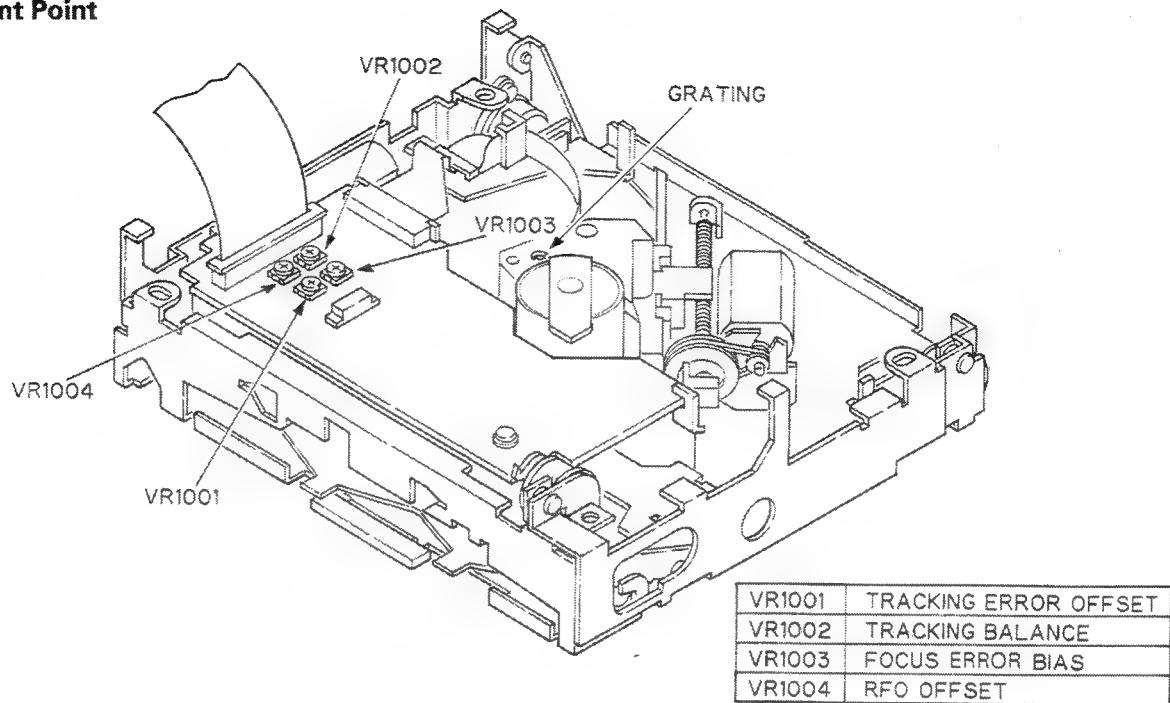


Fig.8

● Test Point

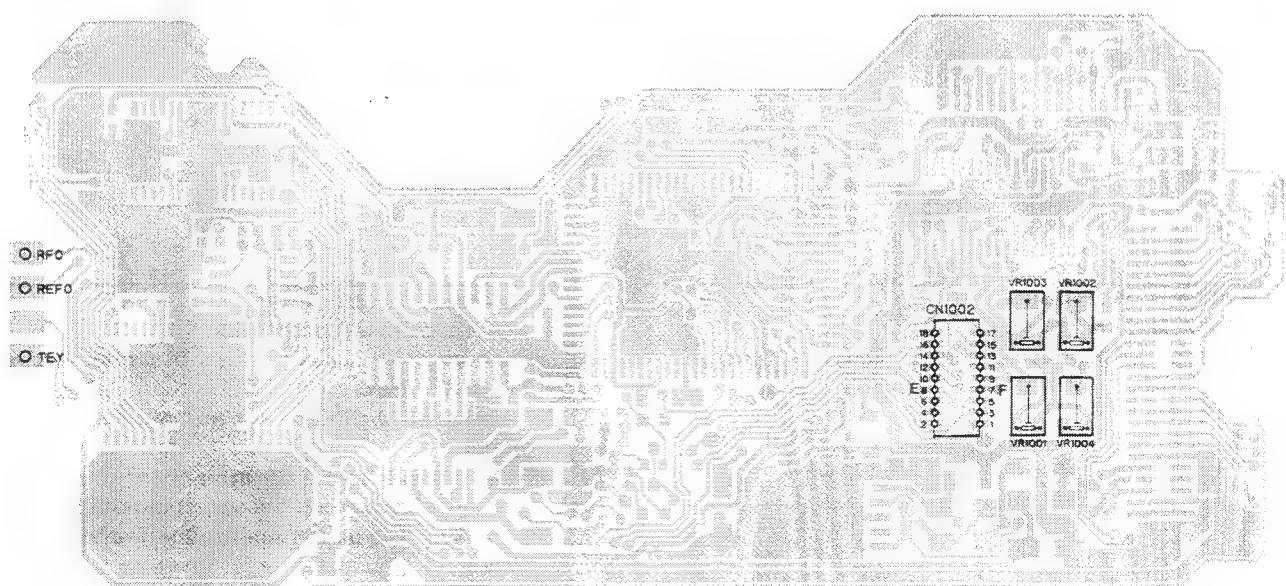
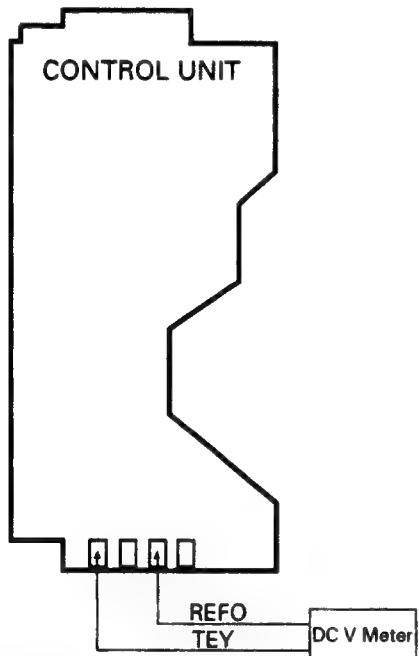


Fig.9

## 1 Tracking Error Offset Adjustment 1

|   |  |
|---|--|
| • <b>Purpose :</b>                                  | To adjust the offset of the tracking pre-amp to zero |
| • <b>Symptoms of Mal-adjustment :</b>               |  |
| Track search NG, Carriage runaway, Poor playability |  |
| • <b>Measuring Equipment / Jig</b>                  | • DC V Meter   |
| • <b>Measuring Point</b>                            | • TEY  |
| • <b>Test Disc , Mode</b>                           | • No disc, TEST MODE                                 |
| • <b>Adjustment Point</b>                           | • VR1001(TE OFFSET VR)                               |

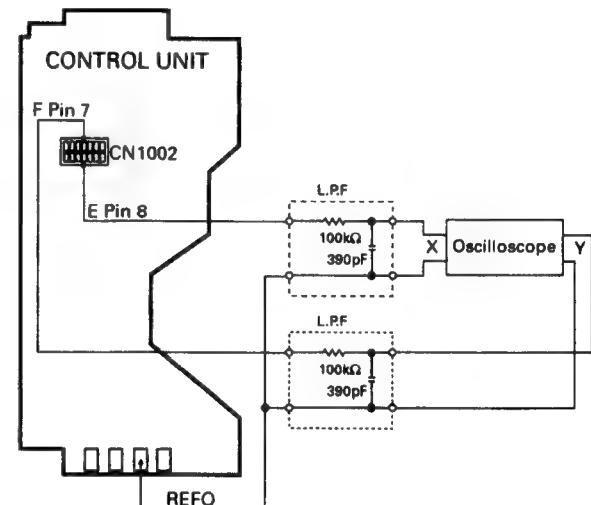


### Adjustment Procedure

- 1.Switch the regulator on.
- 2.Using VR1001, adjust TEY to  $0 \pm 25\text{mV}$  w.r.t. REFO.

## 2 Grating Check / Adjustment 1

|  |   |
|--|---|
| • <b>Purpose :</b>                                       | To check that the PU grating is correctly aligned after the PU unit has been replaced |
| • <b>Symptoms of Mal-adjustment :</b>                    |   |
| Unable to play disc, track skip during search, search NG |   |
| • <b>Measuring Equipment / Jig</b>                       | • Oscilloscope, L.P.F., Clock Driver  |
| • <b>Measuring Point</b>                                 | • E, F  |
| • <b>Test Disc , Mode</b>                                | • ABEX TCD-784, TEST MODE   |
| • <b>Adjustment Point</b>                                | • Grating hole  |



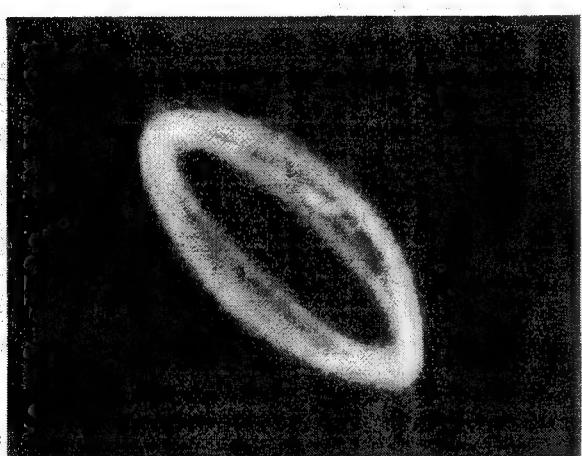
### Adjustment Procedure

- 1.Load disc and switch regulator on.
- 2.Position the PU in the center of the disc using the TR+ & TR- keys.
- 3.Press key 3 to close focus and once more to close spindle.
- 4.Referring to the photographs given check that the grating is within  $\pm 45^\circ$ . If not, it should be possible to make a fine adjustment to the grating by slowly tuning the grating screw. If, however during the adjustment the lissajous figure is seen to "FLIP" then the null point must be found and the adjustment made from there(see next section).

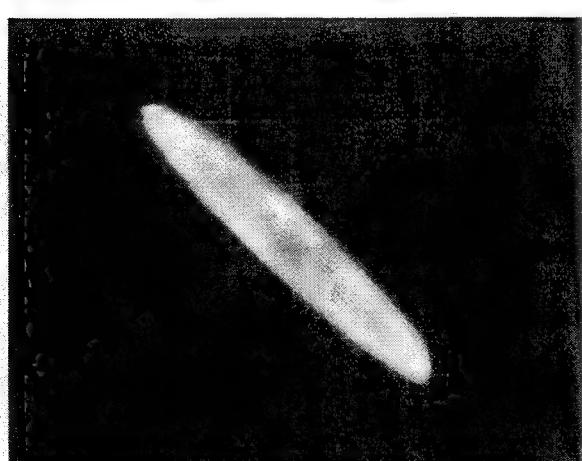
Lissajous figure (AC input)  
Horizontal axis E 10mV/div.  
Vertical axis F 10mV/div.



Waveform 1



Waveform 2



Waveform 3

### 3 Grating Adjustment 2

**Purpose :**

This needs to be done if the previous adjustment was unsuccessful.

**Symptoms of Mal-adjustment :**

Unable to play disc, track skipping, track search NG

**Measuring Equipment / Jig**

Oscilloscope, Grating  
Adjustment filter (BPF), mV  
Meter, L.P.F., Clock Driver

**Measuring Point**

Test Disc , Mode

Adjustment Point

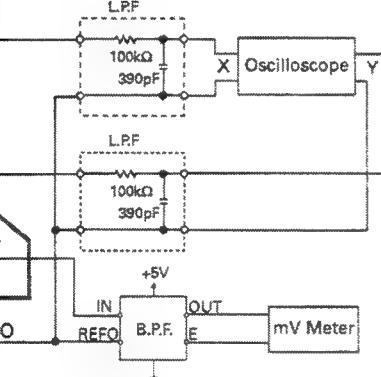
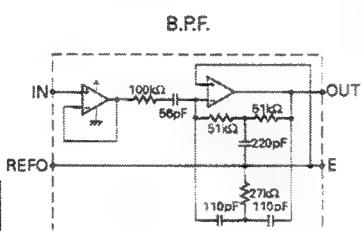
· TEY, E, F  
· ABEX TCD-784, TEST MODE  
· Grating hole

**CONTROL UNIT**

F Pin 7

CN1002

E Pin 8



**Adjustment Procedure**

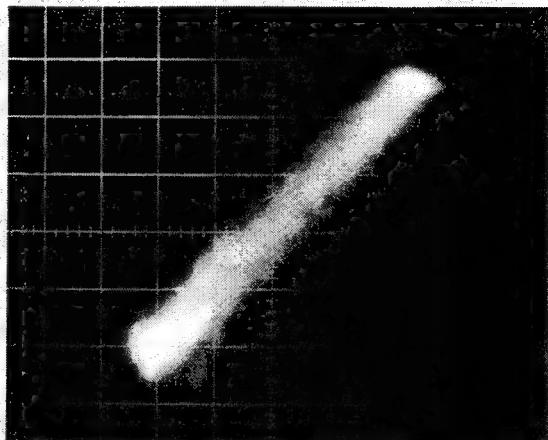
- 1.Load disc and switch regulator on.
- 2.Position PU unit in the center of the disc using the TR+ & TR- keys.
- 3.Press key 3 to close focus and press once more to close spindle.
- 4.While monitoring the output of the BPF connected to TEY, slowly turn the grating screw. The output voltage should pass through many minimums; search for the minimum which is clearly smaller than the rest - this is the "null point", where the E & F sub-beams are lined up with the tracks on the disc.
- 5.From this null point, turn the grating screw clockwise (as seen from the underside of the PU unit) until the lissajous waveform is a single line (or close as possible) as shown in the photograph.

Lissajous figure (AC input)

Horizontal axis E 10mV/div.

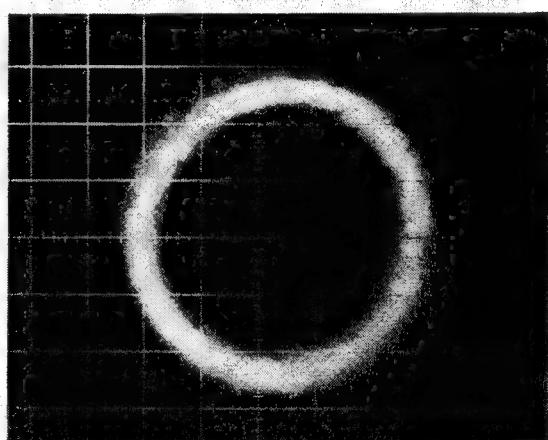
Vertical axis F 10mV/div.

Null Point=180°



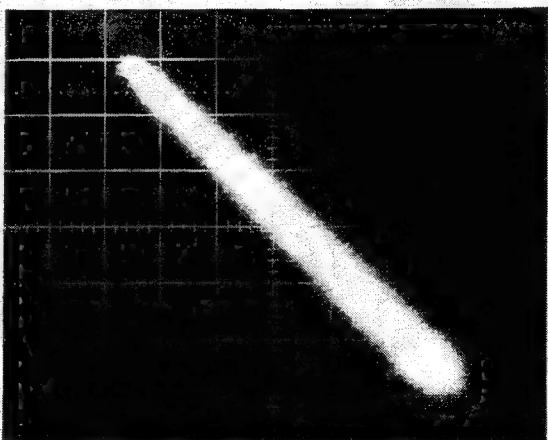
Waveform 4

"Rough" adjustment=90°



Waveform 5

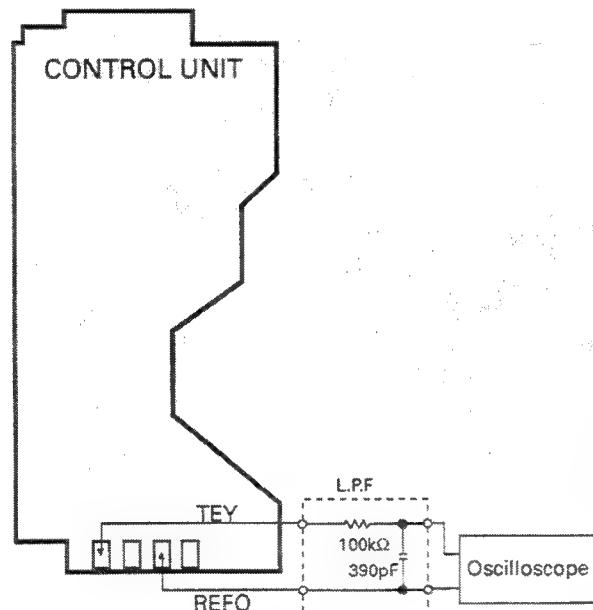
Final adjustment=0°



Waveform 6

#### 4 Tracking Balance Adjustment 1

|                                     |   |
|-------------------------------------|---|
| <b>Purpose :</b>                    | To equate the sensitivity of the F channel to that of the E channel |
| <b>Symptoms of Mal-adjustment :</b> | Track search NG, Poor playability carriage runaway                  |
| <b>Measuring Equipment / Jig</b>    | Oscilloscope, L.P.F.  |
| <b>Measuring Point</b>              | TEY   |
| <b>Test Disc , Mode</b>             | ABEX TCD-784, TEST MODE   |
| <b>Adjustment Point</b>             | VR1002 (T.BAL VR)   |



##### Adjustment Procedure

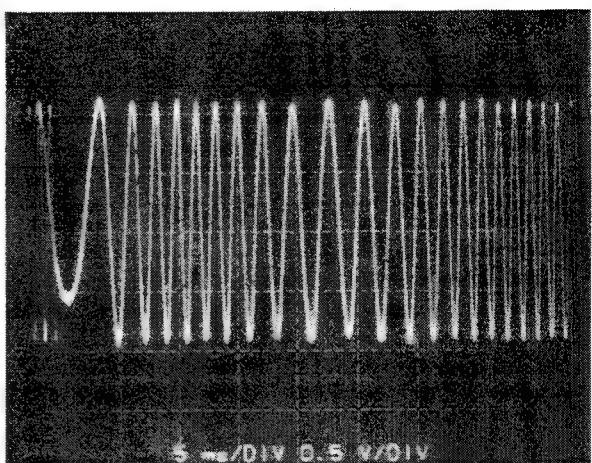
1. Load Disc and switch the regulator on.
2. Position the PU unit in the center of the disc using the TR+ & TR- keys.
3. Close focus by pressing key 3.
4. Observing the TEY waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (see waveform 7-9).

##### Check

After adjustment the TEY waveform should have an amplitude of  $1.5 \pm 0.65$  Vpp (ABEX-784)  
(Providing focus bias is OK)

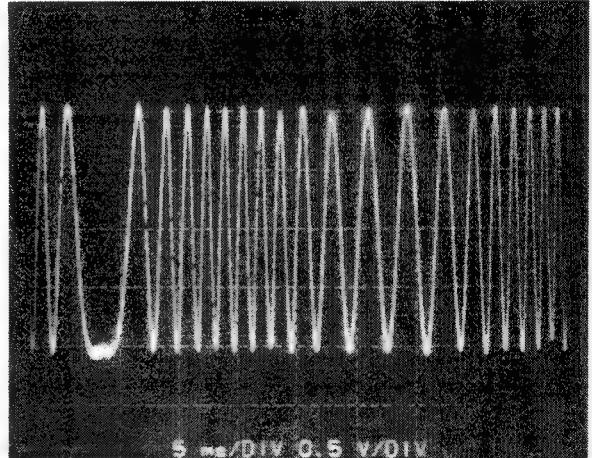
+5% NG

REF0 →



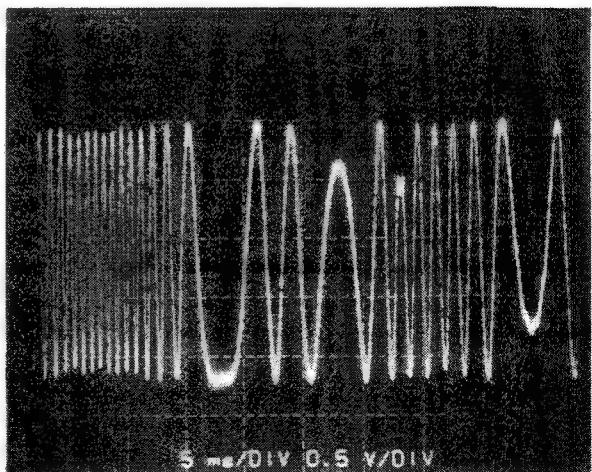
±0% OK

REF0 →



-5% NG

REF0 →



## 5 Focus Bias Adjustment

**Purpose :**

To adjust the focus servo reference so that the RF waveform is an optimum.

**Symptoms of Mal-adjustment :**

Difficulty in closing focus, poor playability.

**Measuring Equipment / Jig**

Oscilloscope

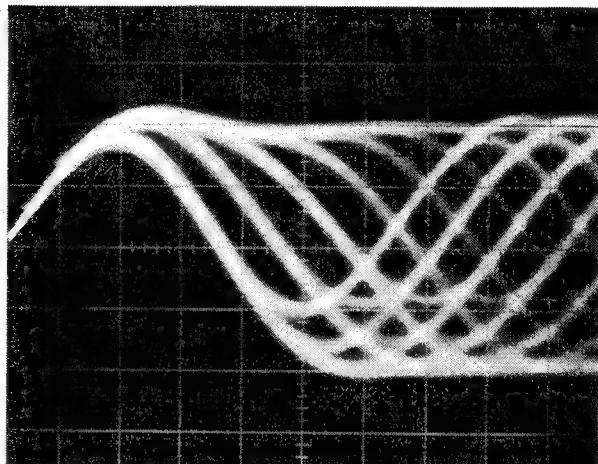
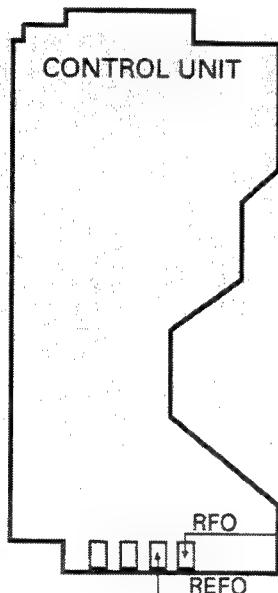
**Measuring Point  
Test Disc , Mode**

RFO

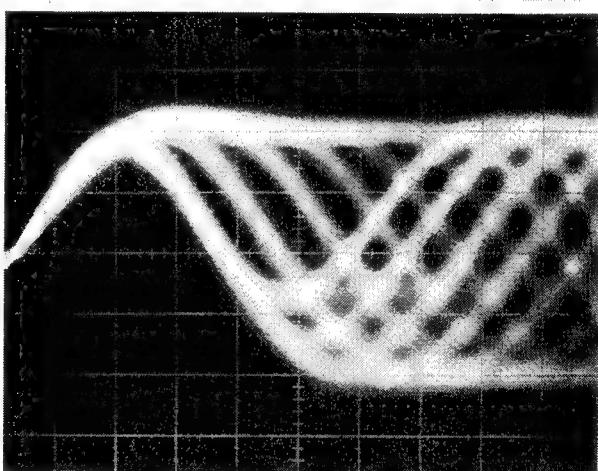
ABEX TCD-784, NORMAL MODE

**Adjustment Point**

VR1003 (FE BIAS VR)



Waveform 10



AC Mode Before adjustment

Waveform 11

**Adjustment Procedure**

- 1) Play track number 18.
- 2) Adjust VR1003 so that the RFO waveform amplitude is a maximum and eye pattern is optimum.

**Check**

After adjustment the RFO waveform should have an amplitude of  $1.7 \pm 0.65$  Vpp (ABEX-784)

## 6 RFO Offset Adjustment

### Purpose

To adjust the RFO waveform offset to an optimum.

### Symptoms of Mal-adjustment

Difficulty in closing focus, poor playability.

### Measuring Equipment / Jig

Oscilloscope

### Measuring Point

RFO

### Test Disc , Mode

ABEX TCD-784, NORMAL MODE

### Adjustment Point

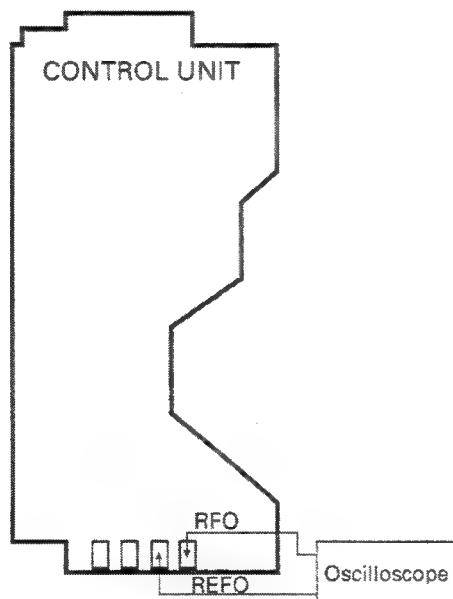
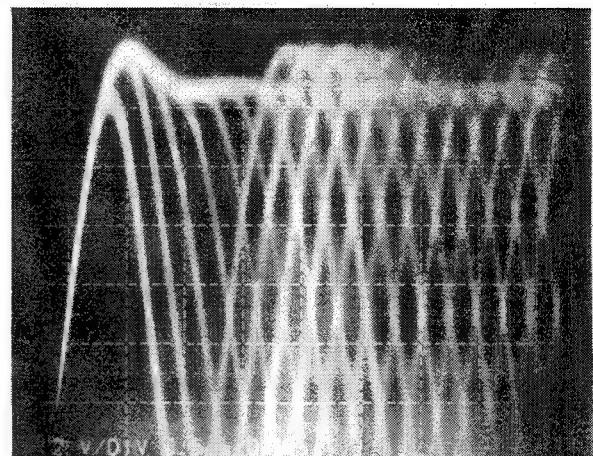
VR1004 (RFO OFFSET VR)

+100mV NG

DC Mode

0.2V/div.

0.5μs/div.



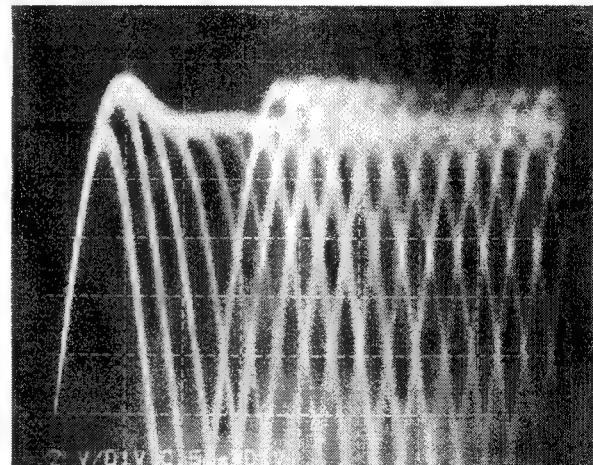
### Adjustment Procedure

- 1) Play track number 18.
- 2) Adjust VR1004 so that the peak value of the upper envelope of the RFO waveform is at +1.1VDC w.r.t. REF0.(See waveform 12-14)

OK

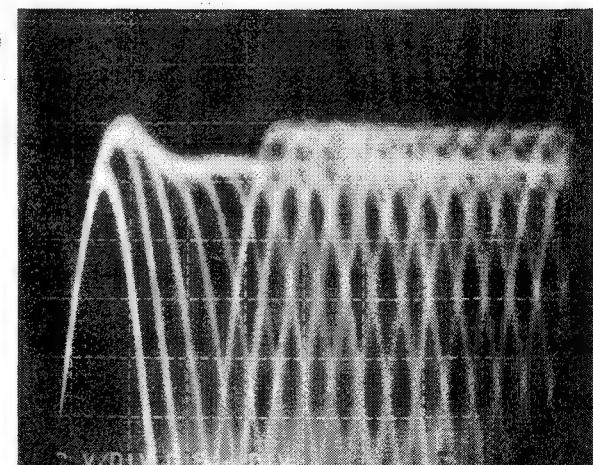
1.1V

REFO →



-100mV NG

REFO →



**7 Tracking Error Offset Adjustment 2****Purpose :**

To check the offset of the tracking pre-amp is zero and adjust if necessary.

**Symptoms of Mal-adjustment :**

Track search NG, Carriage runaway, Poor playability

**Measuring Equipment / Jig**

·DC V Meter

**Measuring Point**

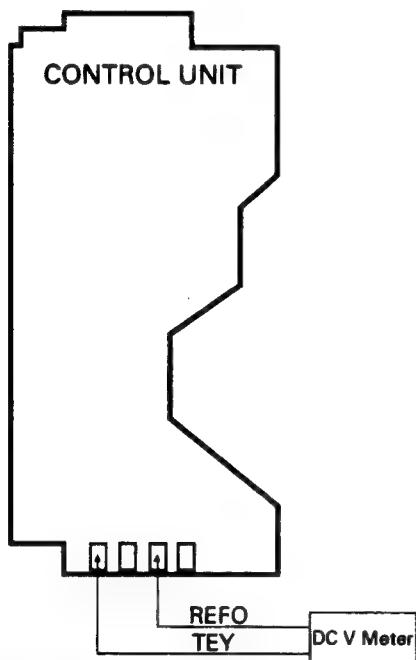
·TEY

**Test Disc , Mode**

·No disc, TEST MODE

**Adjustment Point**

·VR1001(TE OFFSET VR)

**Adjustment Procedure**

- 1.Switch the regulator on.
- 2.Using VR1001, adjust TEY to  $0 \pm 25\text{mV}$  w.r.t. REFO.

**8 Tracking Balance Adjustment 2****Purpose :**

To equate the sensitivity of the F channel to that of the E channel. This needs only be done if the TE OFFSET volume was re-adjusted in the previous step

**Symptoms of Mal-adjustment:**

Track search NG,Poor playability, carriage runaway

**Measuring Equipment / Jig**

·Oscilloscope, L.P.F.

**Measuring Point**

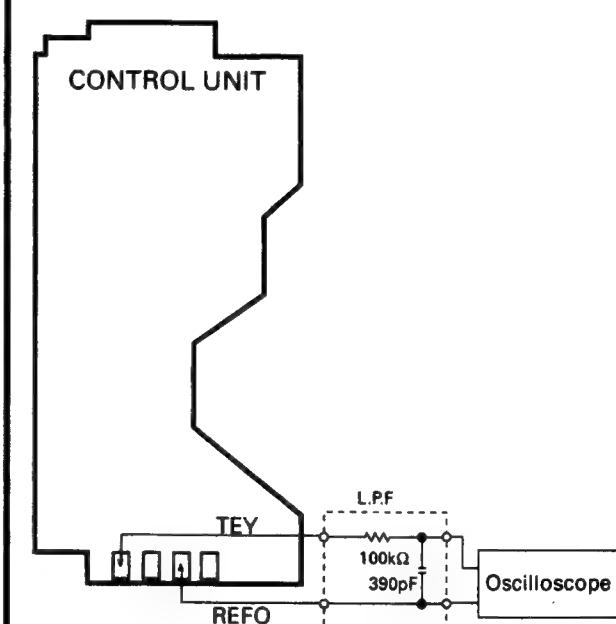
·TEY

**Test Disc , Mode**

·ABEX TCD-784, TEST MODE

**Adjustment Point**

·VR1002 (T.BAL VR)

**Adjustment Procedure**

- 1.Load Disc and switch the regulator on.
- 2.Position the PU unit in the center of the disc using the TR+ & TR- keys.
- 3.Close focus by pressing key 3.
- 4.Observing the TEY waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (See waveform 7-9).

**Check**

After adjustment the TEY waveform should have an amplitude of  $1.5 \pm 0.65 \text{ Vpp}$  (ABEX-784)

## 4.2 TUNER SECTION

### ● Connection Diagram

**NOTE:**

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

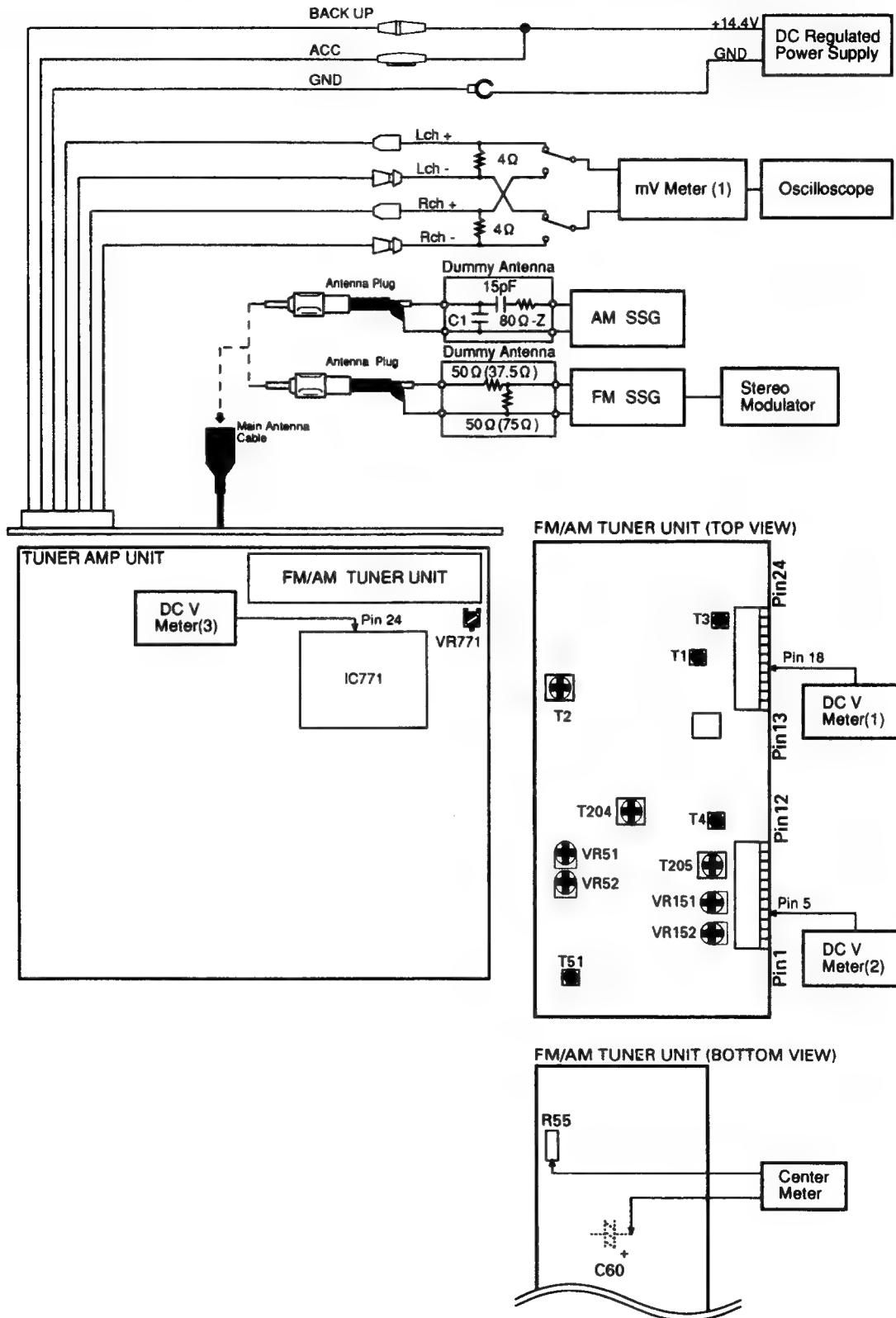


Fig.10

**MW/LW ADJUSTMENT**

|    | No. | AM SSG(400Hz,30%) |                   | Displayed Frequency(kHz) | Adjustment Point | Adjustment Method (Switch Position) |
|----|-----|-------------------|-------------------|--------------------------|------------------|-------------------------------------|
|    |     | Frequency(kHz)    | Level(dB $\mu$ V) |                          |                  |                                     |
| IF | 1   | 999               | 20                | 999                      | T204,T205,       | mV Meter(1) : Maximum               |

**FM ADJUSTMENT**

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)  
 S:STEREO MOD., 1kHz, L or R=90%, Pilot=10%(67.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

|           | FM SSG |                | Displayed Frequency(MHz) | Adjustment Point | Adjustment Method (Switch Position) |                                      |
|-----------|--------|----------------|--------------------------|------------------|-------------------------------------|--------------------------------------|
|           | No.    | Frequency(MHz) | Level(dBf)               |                  |                                     |                                      |
| TUN Volt  | 1      | 108.0 M        | 65                       | 108.0            | T4                                  | DC V Meter(1) : 6.5V±0.1V            |
| IF        | 1      | 98.1 M         | 65                       | 98.1             | T51                                 | Center Meter:0                       |
| ANT,RF    | 1      | 98.1 M         | 10                       | 98.1             | T1,T3                               | mV Meter(1) : Maximum                |
| IFT       | 1      | 98.1 M         | 10                       | 98.1             | T2                                  | mV Meter(1) : Maximum (STEREO MODE)  |
| Soft Mute | 1      | 98.1 M         | 65                       | 98.1             |                                     | mV Meter(1) : A (STEREO MODE)        |
|           | 2      | 98.1 M         | 15                       | 98.1             | VR52                                | mV Meter(1) : A-3dB                  |
| MPX       | 1      | 98.1 S         | 65                       | 98.1             | VR152                               | mV Meter(1) : Separation Maximum     |
| ARC       | 1      | 98.1 S         | 40                       | 98.1             | VR151                               | mV Meter(1) : Separation 5dB         |
| SD        | 1      | 98.1 S         | 22                       | 98.1             | VR51                                | DC V Meter(2) : Approx. 5V (SEEK:ON) |

**FM SL ADJUSTMENT(DEH-605RDS)**

Modulation MONO MOD., 400Hz 100%(75kHz Dev.)

| No. | FM SSG         |            | Displayed Frequency(MHz) | Adjustment Point | Adjustment Method (Switch Position) |
|-----|----------------|------------|--------------------------|------------------|-------------------------------------|
|     | Frequency(MHz) | Level(dBf) |                          |                  |                                     |
| 1   | 106.1          | 52         | 106.1                    | VR771            | DC V Meter(3) : 2.25V±0.05V         |

## 5. ERROR NUMBERS AND NEW TEST MODE

### ● Error Number Indication

If the CD should fail to operate or if an error has taken place during operation the player will enter into the error mode, and the cause of the error will be numerically indicated.

This is aimed at assisting in analysis or repair.

#### (1) Basic Means of Display

- With ERROR indicated in "MODE" on IP-BUS Display date, an error code is transmitted by the use of MIN and SEC.
- The MIN and SEC data will be identical.
- Examples of Display                    E-XX

#### (2) Error Codes

| Error Code | Classification | Description                      | Cause/Detail  |
|------------|----------------|----------------------------------|---|
| 10         | ELECTRIC       | Carriage home failure            | Carriage doesn't move to or from the innermost position<br>→Home switch failed and/or carriage immobile |
| 11         | ELECTRIC       | Focus failure                    | Focus failed<br>→Defects, disc upside-down, severe vibration  |
| 12         | ELECTRIC       | SETUP failure<br>Subcode failure | Spindle failed to lock or subcode unreadable<br>→Spindle defective, defect, severe vibration            |
| 14         | ELECTRIC       | Mirror failure                   | Unrecorded CD-R<br>The disc is upside-down, defects, vibration  |
| 17         | ELECTRIC       | Set up failure                   | AGC protect failed<br>→Defects, disc upside-down, severe vibration                                      |
| 30         | ELECTRIC       | Search time out                  | Failed to reach target address<br>→Carriage/tracking defective and/or defects                           |
| A0         | SYSTEM         | Power failure                    | Power overvoltage or short circuit detected<br>→Switching transistor defective and/or power abnormal    |

"defects" means scratches, dirt etc on the surface of the disc.

### ● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disk number)

During the setup, the CD software operation status (internal RAM and C-point) is displayed.

#### (1) How to enter NEW TEST Mode

See the test mode flow chart Page 1-24.

**(2) Relations of keys between TEST and NEW TEST Modes**

| Keys      | Test Mode                     |                | New Test Mode    |  |
|-----------|-------------------------------|----------------|------------------|--|
|           | Regulator OFF                 | Regulator ON   | PLAY in progress | Error Occurred,<br>Protection Activated      |
| BAND/REL  | Regulator ON                  | Regulator OFF  | —                | Time of occurrence/<br>cause of error select |
| TR+       | —                             | FWD-Kick       | TR+              | —  |
| TR-       | —                             | REV-Kick       | TR-              | —  |
| 1         | —                             | Tracking close | PAUSE            | —  |
| 2         | —                             | Tracking open  | REPEAT           | —  |
| 3         | —                             | Focus close    | RANDOM           | —  |
| TR+ & TR- | To New Test<br>Mode<br>Select | Focus Mode     | AUTO/MANU        | TRACK No./ time<br>of occurrence select      |

Operations, such as EJECT, CD ON/OFF, etc. are performed normally

**(3) Error Cause (Error Number) Code**

| Error Code | Classification | Mode | Description                   | Cause/Detail                                       |
|------------|----------------|------|-------------------------------|--|
| 40         | ELECTRIC       | PLAY | FOK=L                         | Put out of focus                                   |
| 41         | ELECTRIC       | PLAY | LOCK=L<br>150ms               | Scratch,<br>Spindle unlock<br>Stain,<br>Vibration, |
| 42         | ELECTRIC       | PLAY | Subcode<br>unacceptable 500ms | Failed to read subcode<br>Servo defect,<br>etc...  |
| 43         | ELECTRIC       | PLAY | Sound skipped                 | Last address memory<br>operated                    |

**(4) Indicating an Operation Status During Setup**

| Status No. | Description   | Protection operation   |
|------------|---|--|
| 01         | Carriage home mode started  | None   |
| 02         | Carriage moving inwards   | 10-second time out, Home switch failed                               |
| 03         | Carriage moving outwards  | 10-second time out, Home switch failed                               |
| 05         | Carriage moving outwards  | None   |
| 11         | Setup started   | None   |
| 12         | Spindle turn/Focus search started   | None   |
| 13         | Waiting for focus closure (XSI=L)   | Failure to close focus   |
| 10, 14     | Waiting for focus closure (FOK=H)   | Failure to close focus   |
| 15, 16, 17 | Focus closed, Tracking open   | Focus disrupted  |
| 18         | During focus AGC<br>Subcode waiting   | Focus disrupted  |
| 19         | During tracking AGC   | Disrupted focus  |
| 20         | Waiting for MIRR, LOCK or subcode read<br>Carriage closed, SPINDLE=ADAPTIVE | Focus disrupted, MIRR NG, Failure to lock,<br>failed to read subcode |

**(5) Example of Display.**

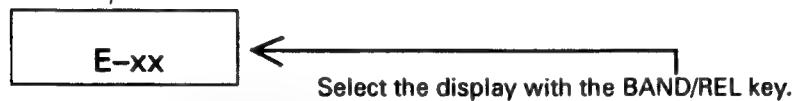
- SET UP in progress  
8 digits                  4 digits(Auto)                  4 digits(Manual)

| TNo. | Min | Sec | TNo. | Min | Sec |
|------|-----|-----|------|-----|-----|
| 11   | 11  | 11  | 11   |     |     |

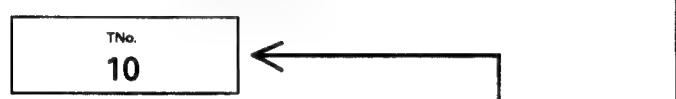
· Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

· Protection/Error upon occurrence(4 digits display)

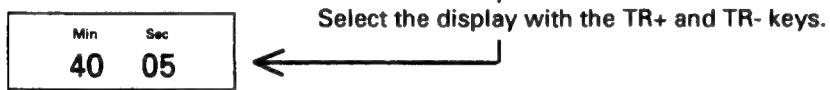
(a) Error number indicated



(b) Track number indicated

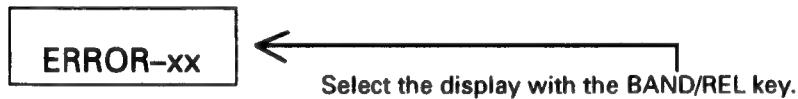


(c) Absolute time indicated



· Protection/Error upon occurrence(8 digits display)

(a) Error number indicated



(b) Track number and  
absolute time indicated



## 6. EXPLODED VIEW PARTS LIST

### ● Chassis(Exploded View:Page 2-9)

#### NOTES:

- Parts marked by “\*” are generally unavailable because they are not in our Master Spare Parts List.
- Parts marked by “◎” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

### ● Parts List(DEH-605RDS)

| Mark | No.                 | Description  | Part No. | Mark  | No.                   | Description  | Part No. |
|------|---------------------|--------------|----------|-------|-----------------------|--------------|----------|
| 1    | Screw               | BSZ26P050FMC |          | 42    | FM/AM Tuner Unit      | CWE1313      |          |
| 2    | Screw               | BSZ26P080FMC |          | 43    | Antenna Jack          | CKX1043      |          |
| 3    | Screw               | PSS26P060FZK |          | 44    | Holder                | CNC4880      |          |
| 4    | Screw               | BSZ30P060FMC |          | 45    | Detach Grille Assy    | CXA5860      |          |
| 5    | Screw               | BSZ30P120FMC |          | 46    | Screw                 | BUZ20P100FZK |          |
| 6    | Cord Assy           | CDE4142      |          | 47    | Button                | CAC4040      |          |
| 7    | Cap                 | CNS1472      |          | 48    | Button                | CAC4041      |          |
| 8    | Resistor            | RS1/2P102JL  |          | 49    | Button                | CAC4042      |          |
| 9    | Screw               | CBA1284      |          | 50    | Button                | CAC3741      |          |
| 10   | Handle              | CNC4947      |          | 51    | Button                | CAC3742      |          |
| 11   | Bush                | CNV1009      |          | 52    | Button                | CAC4039      |          |
| 12   | Case                | CNB1817      |          | 53    | Button                | CAC3744      |          |
| 13   | Holder              | CNC3850      |          | 54    | Grille                | CNS2817      |          |
| 14   | Holder              | CNC4946      |          | 55    | Cover                 | CNS2818      |          |
| 15   | Insulator           | CNM3726      |          | 56    | Key Board Unit        | CWX1661      |          |
| 16   | P.C.Board           | CNP3534      |          | 57    | LCD                   | CAW1228      |          |
| 17   | Case                | CNS2269      |          | 58    | Holder                | CNC5009      |          |
| 18   | Cushion             | CNM3074      |          | 59    | Lens                  | CNV3671      |          |
| 19   | Cap                 | CNV2680      |          | 60    | Rubber                | CNV3672      |          |
| 20   | Holder              | CNV3620      |          | 61    | Connector             | CNV3673      |          |
| 21   | Chassis Unit        | CXA5925      |          | 62    | Rubber                | CNV3675      |          |
| 22   | CD Mechanism Module | CXK2810      |          | 63    | Spacer                | CNM4042      |          |
| 23   | Tuner Amp Unit      | CWX1648      |          | 64    | Plug                  | CKS2402      |          |
| 24   | Screw               | BSZ26P120FMC |          | 65    | Panel Assy            | CXA5875      |          |
| 25   | Cord                | CDE4136      |          | 66    | Screw                 | BPZ20P060FMC |          |
| 26   | Antenna Cable       | CDH1146      |          | 67    | Spring                | CBH1484      |          |
| 27   | Plug(CN951)         | CKM1139      |          | 68    | Socket                | CKS2782      |          |
| 28   | Plug(CN851)         | CKS1238      |          | 69    | Holder                | CNC4943      |          |
| 29   | Connector(CN601)    | CKS1529      |          | 70    | Holder                | CNC4944      |          |
| 30   | Connector(CN651)    | CKS1546      |          | 71    | P.C.Board             | CNP3532      |          |
| 31   | Holder              | CNC4881      |          | 72    | Arm                   | CNV3696      |          |
| 32   | Holder              | CNC4882      |          | 73    | Arm                   | CNV3697      |          |
| 33   | Bracket             | CNC4940      |          | 74    | Panel Unit            | CXA5913      |          |
| 34   | Holder              | CNC5013      |          | 75    | Screw                 | PMS20P030FZK |          |
| 35   | Bracket             | CNC5015      |          | 76    | Detach Mechanism Unit | CXA5188      |          |
| 36   | Insulator           | CNM3825      |          | 77    | Washer                | CBF1039      |          |
| 37   | Heat Sink           | CNR1307      |          | 78    | Spring                | CBH1484      |          |
| 38   | Spacer              | CNM3343      |          | 79    | Arm                   | CNV3292      |          |
| 39   | IC(IC551)           | PA3029A      |          | 80    | Arm                   | CNV3293      |          |
| 40   | Screw               | BSZ30P060FMC |          | 81    | Holder Unit           | CXA5124      |          |
| 41   | Bracket             | CNC5014      |          | 82    | IC(IC971)             | PA2023A      |          |
|      |                     |              |          | 83-90 | .....                 |              |          |

- The DEH-505SDK, DEH-505, DEH-405SDK and DEH-405 Parts Lists enumerate the parts which differ from those enumerated in the DEH-605RDS Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-605RDS Parts List is given on page 1-38.

| Mark No. | Description         | DEH-605RDS | DEH-505SDK | DEH-505    | DEH-405SDK | DEH-405 |
|----------|---------------------|------------|------------|------------|------------|---------|
| 6        | Cord Assy           | CDE4142    | CDE4141    | CDE4142    | CDE4141    | CDE4142 |
| 19       | Cap                 | CNV2680    | .....      | .....      | CNV2680    | CNV2680 |
| 21       | Chassis Unit        | CXA5925    | CXA5933    | CXA5934    | CXA5935    | CXA5934 |
| 23       | Tuner Amp Unit      | CWX1648    | CWX1649    | CWX1651    | CWX1650    | CWX1652 |
| 25       | Cord                | CDE4136    | .....      | .....      | CDE4136    | CDE4136 |
| 28       | Plug(CN851)         | CKS1238    | .....      | .....      | CKS1238    | CKS1238 |
| 29       | Connector(CN601)    | CKS1529    | CKS1534    | CKS1534    | CKS1534    | CKS1534 |
| 31       | Holder              | CNC4881    | CNC4881    | .....      | CNC4881    | .....   |
| 32       | Holder              | CNC4882    | CNC4882    | .....      | CNC4882    | .....   |
| 35       | Bracket             | CNC5015    | CNC5016    | CNC5016    | CNC5015    | CNC5015 |
| 36       | Insulator           | CNM3825    | CNM3825    | .....      | CNM3825    | .....   |
| 42       | FM/AM Tuner Unit    | CWE1313    | CWE1311    | CWE1311    | CWE1311    | CWE1311 |
| 45       | Detach Grille Assy  | CXA5860    | CXA5861    | CXA5866    | CXA5865    | CXA5867 |
| 52       | Button              | CAC4039    | .....      | .....      | .....      | .....   |
| 54       | Grille              | CNS2817    | .....      | .....      | CNS2835    | CNS2837 |
|          | Grille Unit         | .....      | CXA5921    | CXA5922    | .....      | .....   |
| 56       | Key Board Unit      | CWX1661    | CWX1662    | CWX1662    | CWX1664    | CWX1664 |
| 57       | LCD                 | CAW1228    | CAW1229    | CAW1229    | CAW1229    | CAW1229 |
| 58       | Holder              | CNC5009    | CNC5010    | CNC5010    | CNC5010    | CNC5010 |
| 65       | Panel Assy          | CXA5875    | CXA5876    | CXA5876    | CXA5876    | CXA5876 |
| 68       | Socket              | CKS2782    | CKS2783    | CKS2783    | CKS2783    | CKS2783 |
| 71       | P.C.Board           | CNP3532    | CNP3526    | CNP3526    | CNP3526    | CNP3526 |
| 83       | Plug(CN851)         | .....      | CKS1242    | CKS1242    | .....      | .....   |
| 84       | Cord                | .....      | CDE4138    | CDE4138    | .....      | .....   |
| 85       | Cap                 | .....      | CNV2680    | CNV2680    | .....      | .....   |
| 86       | Spacer              | .....      | CNM4027    | CNM4027    | .....      | .....   |
| 87       | Remote Control Assy | .....      | CXA6155    | CXA6155    | .....      | .....   |
| 88       | Battery Cover       | .....      | CNS2850    | CNS2850    | .....      | .....   |
| 89       | IC(IC922)           | .....      | RPM-678CBR | RPM-678CBR | .....      | .....   |
| 90       | Spacer              | .....      | CNM3882    | .....      | CNM3882    | .....   |

● CD Mechanism Module(Exploded View:Page 2-11)

| Mark No. | Description       | Part No.     | Mark No. | Description | Part No. |
|----------|-------------------|--------------|----------|-------------|----------|
| 1        | Screw             | PMS26P040FMC | 11       | Screw       | CBA1077  |
| 2        | Control Unit      | CWX1641      | 12       | Screw       | CBA1230  |
| 3        | Connector(CN1001) | CKS1955      | 13       | Screw       | CBA1296  |
| 4        | Connector(CN1701) | CKS2775      | 14       | Washer      | CBF1038  |
| 5        | Connector(CN1002) | CKS2811      | 15       | Washer      | CBF1060  |
| 6        | Connector(CN1801) | CKS2196      | 16       | Spring      | CBH1415  |
| 7        | CD Mechanism Unit | CXA6475      | 17       | Spring      | CBH1417  |
| 8        | Screw             | BMZ20P030FMC | 18       | Spring      | CBH1418  |
| 9        | Screw             | BSZ20P040FMC | 19       | Spring      | CBH1421  |
| 10       | Screw             | CBA1041      | 20       | Spring      | CBH1423  |

# DEH-805RDS, 505SDK, 505, 405SDK, 405

| Mark No. | Description  | Part No. | Mark No. | Description      | Part No.     |              |
|----------|--------------|----------|----------|------------------|--------------|--------------|
| 21       | Spring       | CBH1457  | 66       | Gear             | CNV3569      |              |
| 22       | Spring       | CBH1552  | 67       | Gear             | CNV3570      |              |
| 23       | Spring       | CBH1553  | 68       | Arm              | CNV3571      |              |
| 24       | Spring       | CBH1554  | 69       | Holder           | CNV3572      |              |
| 25       | Spring       | CBH1555  | 70       | Gear             | CNV3573      |              |
| 26       | Spring       | CBH1556  | 71       | Holder           | CNV3574      |              |
| 27       | Spring       | CBH1557  | 72       | Holder           | CNV3575      |              |
| 28       | Spring       | CBH1558  | 73       | Holder           | CNV3576      |              |
| 29       | Spring       | CBH1559  | 74       | Rack             | CNV3577      |              |
| 30       | Spring       | CBH1560  | 75       | Arm              | CNV3578      |              |
| 31       | Spring       | CBH1576  | 76       | Plate            | CNV3629      |              |
| 32       | Spring       | CBH1577  | 77       | Guide            | CNV3694      |              |
| 33       | Spring       | CBH1578  | 78       | P.C. Board       | CNP3418      |              |
| 34       | Spring       | CBH1583  | 79       | P.C. Board       | CNP3666      |              |
| 35       | Spring       | CBH1628  | 80       | Screw Unit       | CXA2375      |              |
| 36       | Spring       | CBL1170  | 81       | Motor Unit       | CXA4649      |              |
| 37       | Spring       | CBL1171  | 82       | Chassis Unit     | CXA5602      |              |
| 38       | Spring       | CBL1172  | 83       | Arm Unit         | CXA5603      |              |
| 39       | Connector    | CDE4147  | 84       | Arm Unit         | CXA5604      |              |
| 40       | PU Unit      | CGY1031  | 85       | Bracket Unit     | CXA5605      |              |
| 41       | Shaft        | CLA2220  | 86       | Lever Unit       | CXA5606      |              |
| 42       | Roller       | CLA2255  | 87       | Arm Unit         | CXA5607      |              |
| 43       | Shaft        | CLA2256  | 88       | Arm Unit         | CXA5608      |              |
| 44       | Frame        | CNC4888  | 89       | Gear Unit        | CXA5609      |              |
| 45       | Arm          | CNC4889  | 90       | Motor Unit       | CXA5703      |              |
| 46       | Lever        | CNC4891  | 91       | Bracket Unit     | CXA5938      |              |
| 47       | Lever        | CNC4892  | 92       | Frame Unit       | CXA6192      |              |
| 48       | Bracket      | CNC4893  | 93       | Motor Unit       | CXA6456      |              |
| 49       | Arm          | CNC4895  | 94       | Screw            | JFZ17P035FNI |              |
| 50       | Arm          | CNC4898  | 95       | Screw            | JFZ20P014FMC |              |
| 51       | Bracket      | CNC5424  | 96       | Screw            | JFZ20P020FZK |              |
| 52       | Spacer       | CNM3315  | 97       | Screw            | JFZ20P025FMC |              |
| 53       | Sheet        | CNM4066  | 98       | Photo-transistor | PT4800       |              |
| 54       | Sheet        | CNM3693  | 99       | Washer           | YE15FUC      |              |
| 55       | Bracket      | CNM3917  | 100      | Washer           | YE20FUC      |              |
| 56       | Belt         | CNT1053  | 101      | Spacer           | CNM3999      |              |
| 57       | Clamper Unit | CXA6552  | 102      | Sheet            | CNM4028      |              |
| 58       | Guide        | CNV2891  | 103      | Holder           | CNV3805      |              |
| 59       | Holder       | CNV3276  | 104      | Spacer           | CNC5436      |              |
| #        | 60           | Roller   | CNV3412  | 105              | Screw        | JFZ20P045FMC |
| 61       | Damper       | CNV3720  |          |                  |              |              |
| 62       | Arm          | CNV3565  |          |                  |              |              |
| 63       | Arm          | CNV3566  |          |                  |              |              |
| 64       | Gear         | CNV3567  |          |                  |              |              |
| 65       | Gear         | CNV3568  |          |                  |              |              |

## 7. ELECTRICAL PARTS LIST

### NOTE:

● Parts whose parts numbers are omitted are subject to being not supplied.

● The part numbers shown below indicate chip components.

#### Chip Resistor

RS1/OS000J, RS1/OOS000J

#### Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

| =====Circuit Symbol & No. Part Name=====                                   |                                  |                    | Part No.     | =====Circuit Symbol & No. Part Name===== |  |  | Part No.  |                         |  |  |              |  |              |
|--|----------------------------------|--------------------|--------------|--|--|--|-----------|-------------------------|--|--|--------------|--|--------------|
| Unit Number : CWE1313(DEH-605RDS)<br>CWE1311(DEH-505SDK, 505, 405SDK, 405) |                                  |                    |              |  |  |  | RESISTORS |                         |  |  |              |  |              |
| Unit Name : FM/AM Tuner Unit   |                                  |                    |              |  |  |  | R 1       |                         |  |  |              |  |              |
| MISCELLANEOUS  |                                  |                    |              |  |  |  | R 2       |                         |  |  |              |  |              |
| IC 1   |                                  |                    | PA2021B      | R 3 10 16 18 20                          |  |  |           |                         |  |  | RS1/16S223J  |  |              |
| IC 2   |                                  |                    | PA2022A      | R 4 5                                    |  |  |           |                         |  |  | RS1/16S271J  |  |              |
| Q 1  |                                  |                    | 3SK195       | R 6                                      |  |  |           |                         |  |  | RS1/16S223J  |  |              |
| Q 2 202  |                                  |                    | 2SC2712      | R 7 14                                   |  |  |           |                         |  |  | RS1/16S0R0J  |  |              |
| Q 3  |                                  |                    | DTC124EU     | R 8                                      |  |  |           |                         |  |  | RS1/16S680J  |  |              |
| Q 51   |                                  |                    | DTC124TU     | R 9                                      |  |  |           |                         |  |  | RS1/16S563J  |  |              |
| Q 52   |                                  |                    | 2SC4207      | R 11                                     |  |  |           |                         |  |  | RS1/16S152J  |  |              |
| Q 53   |                                  |                    | 2SA1586      | R 12                                     |  |  |           |                         |  |  | RS1/16S473J  |  |              |
| Q 201  |                                  |                    | 2SK435       | R 13 15 217                              |  |  |           |                         |  |  | RS1/16S474J  |  |              |
| D 1  |                                  |                    | 1SV172       | R 17 206                                 |  |  |           |                         |  |  | RS1/16S123J  |  |              |
| D 2 3 4  |                                  |                    | KV1410       | R 21 22                                  |  |  |           |                         |  |  | RS1/16S152J  |  |              |
| D 5  |                                  |                    | MA151WK-MT   | R 51 74                                  |  |  |           |                         |  |  | RS1/16S751J  |  |              |
| D 6 151 201 202  |                                  |                    | MA157-MR     | R 52                                     |  |  |           |                         |  |  | RS1/16S682J  |  |              |
| D 203  |                                  |                    | SVC203CP     | R 53                                     |  |  |           |                         |  |  | RS1/16S332J  |  |              |
| L 1  |                                  | Inductor           | LCTBR12K2125 | R 55 157                                 |  |  |           |                         |  |  | RS1/16S102J  |  |              |
| L 2 52   |                                  | Ferri-Inductor     | LAU150K      | R 56                                     |  |  |           |                         |  |  | RS1/16S391J  |  |              |
| L 51   |                                  | Ferri-Inductor     | LAU2R2K      | R 58 73 203                              |  |  |           |                         |  |  | RS1/16S123J  |  |              |
| L 201  |                                  | Ferri-Inductor     | LAU4R7K      | R 60                                     |  |  |           |                         |  |  | RS1/16S391J  |  |              |
| L 202  |                                  | Coil 1mH           | CTF1028      | R 72                                     |  |  |           |                         |  |  | RS1/16S224J  |  |              |
| L 203  |                                  | Inductor           | LAU390K      | R 101                                    |  |  |           |                         |  |  | RS1/16S822J  |  |              |
| L 204  |                                  | Ferri-Inductor     | LAU680K      | R 102 222                                |  |  |           |                         |  |  | RS1/16S223J  |  |              |
| L 205  |                                  | Ferri-Inductor     | LAU330K      | R 103                                    |  |  |           |                         |  |  | RS1/16S822J  |  |              |
| L 206  |                                  | Inductor           | CTF1198      | R 104                                    |  |  |           |                         |  |  | RS1/16S272J  |  |              |
| T 1  |                                  | Coil               | CTC1078      | R 151 152                                |  |  |           |                         |  |  | RS1/16S103J  |  |              |
| T 2  |                                  | Coil               | CTE1077      | R 153                                    |  |  |           |                         |  |  | RS1/16S103J  |  |              |
| T 3  |                                  | Coil               | CTC1077      | R 154 155 202                            |  |  |           |                         |  |  | RS1/16S153J  |  |              |
| T 4  |                                  | Coil               | CTC1079      | R 156                                    |  |  |           |                         |  |  | RS1/16S183J  |  |              |
| T 51   |                                  | Coil               | CTC1081      | R 158                                    |  |  |           |                         |  |  | RS1/16S103J  |  |              |
| T 202  |                                  | Coil               | CTB1102      | R 159 216                                |  |  |           |                         |  |  | RS1/16S222J  |  |              |
| T 203  |                                  | Coil               | CTE1076      | R 204 213                                |  |  |           |                         |  |  | RS1/16S823J  |  |              |
| T 204  |                                  | Coil               | CTE1077      | R 205                                    |  |  |           |                         |  |  | RS1/16S225J  |  |              |
| T 205  |                                  | Coil               | CTE1075      | R 207                                    |  |  |           |                         |  |  | RS1/16S752J  |  |              |
| AR 1   | Capacitor with Discharge Gap     |                    | DSP-201M     | R 208                                    |  |  |           |                         |  |  | RS1/16S822J  |  |              |
| CF 1 51  | 52(DEH-605RDS)                   |                    | CTF1292      | R 209                                    |  |  |           |                         |  |  | RS1/16S333J  |  |              |
| CF 1 51  | 52(DEH-505SDK, 505, 405SDK, 405) |                    | CTF1290      | R 214                                    |  |  |           |                         |  |  | RS1/16S330J  |  |              |
| CF 201   |                                  | Ceramic Filter     | CTF1291      | R 215                                    |  |  |           |                         |  |  | RS1/16S333J  |  |              |
| CF 202   |                                  | Ceramic Filter     | CTF1300      | R 218                                    |  |  |           |                         |  |  | RS1/16S100J  |  |              |
| X 151  |                                  | Ceramic Resonator  | CSS1308      | R 220                                    |  |  |           |                         |  |  | CCSRCH220J50 |  |              |
| X 201  |                                  | Crystal Resonator  | CSS1111      | R 221                                    |  |  |           |                         |  |  | CCSRCH390J50 |  |              |
| VR 51  |                                  | Semi-fixed 47kΩ(B) | CCP1210      | R 222                                    |  |  |           |                         |  |  | CKSQYB473K16 |  |              |
| VR 52  |                                  | Semi-fixed 68kΩ(B) | CCP1211      | R 223                                    |  |  |           |                         |  |  | CCSRCH070D50 |  |              |
| VR 151   |                                  | Semi-fixed 10kΩ(B) | CCP1206      | R 224                                    |  |  |           |                         |  |  | CCSRCH270J50 |  |              |
| VR 152   |                                  | Semi-fixed 22kΩ(B) | CCP1208      | R 225                                    |  |  |           |                         |  |  | CCSRCH220J50 |  |              |
| CAPACITORS   |                                  |                    |              |  |  |  | C 1 54    |                         |  |  |              |  |              |
| VR 52  |                                  |                    |              |  |  |  | C 2       | C 2                     |  |  |              |  | CCSRCH390J50 |
| VR 151   |                                  |                    |              |  |  |  | C 3       | C 3 102 154 163 203 210 |  |  |              |  | CKSQYB473K16 |
| VR 152   |                                  |                    |              |  |  |  | C 4       | C 4 12                  |  |  |              |  | CCSRCH070D50 |
| VR 51  |                                  |                    |              |  |  |  | C 5       | C 5 53                  |  |  |              |  | CCSRCH270J50 |

# DEH-605RDS, 505SDK, 505, 405SDK, 405

| =====Circuit Symbol & No. Part Name===== |  | Part No.     | =====Circuit Symbol & No. Part Name=====  |                         | Part No.          |
|--|--|--------------|---|-------------------------|-------------------|
| C 6                                      |  | CKSRYB222K50 | Q 453                                     | 454 455 456             | DTC314TK          |
| C 7                                      |  | CCSRCH040C50 | Q 457                                     |                         | 2SA1162           |
| C 8 105                                  |  | CKSRYB222K50 | Q 501                                     |                         | 2SC3295           |
| C 9 16                                   |  | CCSRCH470J50 | Q 503                                     |                         | 2SC3098           |
| C 10                                     |  | CCSRCH090D50 | Q 505 509                                 |                         | 2SK208            |
| C 11                                     |  | CKSRYB223K25 | Q 551                                     | 601 604 606 864 957 983 | DTC114EK          |
| C 13                                     |  | CCSRCH070D50 | Q 602                                     | 863 982                 | DTA114EK          |
| C 14                                     |  | CKSRYB103K50 | Q 603                                     | 605 607 956             | 2SB1238           |
| C 15 22 55 101 151 164 219 220 225 227   |  | CKSQYB104K25 | Q 772                                     |                         | DTC124EK          |
| C 17                                     |  | CCSRCH100D50 | Q 861                                     | 862                     | 2SC2712           |
| C 18                                     |  | CCSRCH080D50 | Q 981                                     |                         | 2SD2396           |
| C 19 20 21 52 62 71 74 201 207 209       |  | CKSRYB103K50 | D 501                                     | 971                     | MA151WK-MT        |
| C 23                                     |  | CEA3R3M50LL  | D 504                                     | 505                     | MA3027H           |
| C 24 29 73 106 213                       |  | CKSRYB223K25 | D 771                                     | 972 973                 | 1SS133            |
| C 25                                     |  | CKSRYB682K50 | D 772                                     |                         | MTZ4R7B           |
| C 26 28 231                              |  | CEA101M16LL  | D 861                                     |                         | MA151WA-MN        |
| C 51 223                                 |  | CKSRYB103K50 | D 951                                     | 952 957 961             | ERA15-02VH        |
| C 56 162 211                             |  | CEA010M50LL  | D 956                                     |                         | ERA15-10VH        |
| C 57 64 66 237                           |  | CCSRCH101J50 | D 981                                     |                         | RB100AVH          |
| C 58                                     |  | CKSRYB153K25 | D 984                                     |                         | HZS9LC3           |
| C 60                                     |  | CEAR47M50LL  | L 501                                     |                         | Ferri-Inductor    |
| C 61                                     |  | CEAR22M50LL  | L 502                                     |                         | CTF-157           |
| C 63                                     |  | CKSQYB104K25 | L 601 602 603                             |                         | LAU220K           |
| C 65                                     |  | CEA0R1M50LL  | TH 601                                    |                         | LAU470K           |
| C 103                                    |  | CKSQYB222K50 | IB 551 552                                |                         | CCX1008           |
|  |  |              |   |                         | CWW1338           |
| C 104                                    |  | CEA4R7M35LL  | IB 601                                    |                         | Diode Array       |
| C 152 153                                |  | CKSRYB223K25 | IB 602                                    |                         | CWW1337           |
| C 155                                    |  | CEAR47M50LL  | X 501                                     |                         | Crystal Resonator |
| C 156                                    |  | CKSQYB563K16 | X 601                                     |                         | CSS1011           |
| C 158 212                                |  | CEA100M16LL  | VR 771                                    |                         | CSS1023           |
|  |  |              |   |                         | VRMB6VS222        |
| C 159                                    |  | CCSRCH331J50 | BZ 601                                    |                         | CPV1011           |
| C 160                                    |  | CKSYB105K16  | TUN501                                    |                         | CWE1313           |
| C 181                                    |  | CKSQYB104K25 |   |                         | RESISTORS         |
| C 202                                    |  | CKSRYB332K50 |   |                         |                   |
| C 204                                    |  | CCSRCH120J50 | R 451 452 514 515 521 522 602 604 618 619 |                         | RS1/10S473J       |
| C 205                                    |  | CCSRCH560J50 | R 453 454                                 |                         | RS1/10S0R0J       |
| C 206 221                                |  | CCSRCH680J50 | R 455 456 457 458 463 464 529 533 536 538 |                         | RS1/10S102J       |
| C 208                                    |  | CEA470M16LL  | R 459 460 505 865 866 952 956             |                         | RS1/10S223J       |
| C 214 230                                |  | CKSRYB472K50 | R 467 468 488 489 490 491                 |                         | RS1/10S103J       |
| C 215 228                                |  | CKSRYB103K50 | R 471 472                                 |                         | RS1/10S272J       |
| C 216                                    |  | CCSRCH100D50 | R 473 474                                 |                         | RD1/4PS163JL      |
| C 217                                    |  | CCSRCH221J50 | R 475 476                                 |                         | RS1/10S273J       |
| C 218 234                                |  | CEA220M16LL  | R 477 478                                 |                         | RS1/10S331J       |
| C 222                                    |  | CCSRCH150J50 | R 481 482                                 |                         | RS1/10S272J       |
| C 224                                    |  | CCSRCH181J50 | R 485 486 487 566 567 568 569             |                         | RD1/4PS472JL      |
| C 226                                    |  | CEA4R7M35LL  | R 492 493 494 495 507 974                 |                         | RS1/10S103J       |
| C 229                                    |  | CEAR68M50LL  | R 503 508 509 512 516 530 551 552 553 554 |                         | RS1/10S472J       |
| C 232                                    |  | CCSRCH390J50 | R 504 511 513 534 535 601 603 863         |                         | RS1/10S222J       |
| C 233                                    |  | CKSRYB332K50 | R 506                                     |                         | RS1/10S221J       |
| C 235                                    |  | CKSQYB104K25 | R 510                                     |                         | RS1/10S123J       |
| C 236                                    |  | CKSRYB223K25 | R 517 518 519 520                         |                         | RD1/4PS222JL      |
|  |  |              | R 523                                     |                         | RS1/10S563J       |
|  |  |              | R 524 784                                 |                         | RS1/10S101J       |
|  |  |              | R 525 782                                 |                         | RS1/10S332J       |
| Unit Number : CWX1648(DEH-605RDS)        |  |              | R 526                                     |                         | RS1/10S331J       |
| Unit Name : Tuner Amp Unit               |  |              | R 527                                     |                         | RS1/10S821J       |
| MISCELLANEOUS                            |  |              | R 528                                     |                         | RS1/10S680J       |
| IC 471                                   |  | NJM4558L     | R 531                                     |                         | RS1/8S103J        |
| IC 481                                   |  | LC7538JMHS   | R 532 781                                 |                         | RS1/10S152J       |
| IC 482 483                               |  | NJM4558MD    |   |                         |                   |
| IC 501                                   |  | LC72140M     | R 539 540 541 605 606 616 652 657 658 659 |                         | RS1/10S102J       |
| IC 551                                   |  | PA3029A      | R 542                                     |                         | RS1/10S822J       |
| IC 601                                   |  | PD4483B      | R 545 546                                 |                         | RS1/8S0R0J        |
| IC 771                                   |  | CWV1044      | R 548                                     |                         | RS1/10S330J       |
| IC 961                                   |  | PAJ001A      | R 549                                     |                         | RD1/4PS102JL      |
| IC 971                                   |  | PA2023A      |   |                         |                   |
| Q 451 452 502 504 508 771 773            |  | 2SC2712      |   |                         |                   |

# DEH-605RDS, 505SDK, 505, 405SDK, 405

| =====Circuit Symbol & No. Part Name=====  |                  |  | Part No.     | =====Circuit Symbol & No. Part Name=====  |                 |                              | Part No.     |
|---|------------------|--|--------------|---|-----------------|------------------------------|--------------|
| R 555 556                                 |                  |  | RS1/10S2R2J  | C 612 613                                 |                 |                              | CKSQYB102K50 |
| R 557                                     |                  |  | RD1/4PS102JL | C 771                                     |                 |                              | CEAR47M50LL  |
| R 558 559 560 561 562 563 564 565         |                  |  | RD1/4PS2R2JL | C 773 862                                 |                 |                              | CEA100M16LL  |
| R 570                                     |                  |  | RD1/4PS752JL | C 863 864                                 |                 |                              | CCSQCH221J50 |
| R 571                                     |                  |  | RS1/10S560J  | C 962                                     |                 |                              | CEAR22M50LL  |
| R 573                                     |                  |  | RS1/10S682J  | C 984                                     |                 |                              | CEA2R2M50LL  |
| R 617                                     |                  |  | RS1/8S473J   | C 965                                     |                 |                              | CEA220M6R3LL |
| R 620 963                                 |                  |  | RS1/10S683J  | C 971                                     |                 |                              | CEA010M50LL  |
| R 621 634 772 773 774 775 776 777 778     |                  |  | RS1/10S473J  | C 972                                     |                 |                              | CEAS470M10   |
| R 622 624                                 |                  |  | RD1/4PS222JL | C 973                                     |                 |                              | CEAS101M10   |
| R 623 625 971                             |                  |  | RS1/10S104J  | C 974                                     |                 |                              | CEAS221M10   |
| R 626                                     |                  |  | RS1/10S183J  | C 975                                     | 330 $\mu$ F/10V |                              | CCH1181      |
| R 627 629 632 957 973 984                 |                  |  | RS1/10S472J  | C 981                                     |                 |                              | CEAS331M18   |
| R 628 630 958                             |                  |  | RD1/4PS272JL |   |                 |                              |              |
| R 633                                     |                  |  | RD1/4PS472JL |   |                 |                              |              |
| R 645 646 647                             |                  |  | RS1/10S472J  | Unit Number : CWX1641                     |                 |                              |              |
| R 648                                     |                  |  | RS1/10S682J  | Unit Name : Control Unit                  |                 |                              |              |
| R 651                                     |                  |  | RD1/4PS102JL | MISCELLANEOUS                             |                 |                              |              |
| R 653 654 655 656                         |                  |  | RS1/10S681J  |   |                 |                              |              |
| R 660 662 663 664 780 783 972             |                  |  | RS1/10S102J  | IC 1001                                   |                 |                              | UPC2571GS    |
| R 670 671 672                             |                  |  | RD1/4PS472JL | IC 1201                                   |                 |                              | UPD63700GF   |
| R 673                                     |                  |  | RD1/4PS103JL | IC 1301                                   |                 |                              | PA3026       |
| R 771                                     |                  |  | RS1/10S471J  | IC 1302                                   |                 |                              | XRA6285FP    |
| R 861 862                                 |                  |  | RD1/4PS211JL | IC 1303                                   |                 |                              | NJM4558M     |
| R 864                                     |                  |  | RS1/8S222J   | IC 1601                                   |                 |                              | TC9268F      |
| R 951                                     |                  |  | RS1/10S0R0J  | IC 1602                                   |                 |                              | TA2063F      |
| R 959                                     |                  |  | RD1/4PS513JL | IC 1701                                   |                 |                              | PQ05TZ51     |
| R 961                                     |                  |  | RS1/8S823J   | Q 1001                                    |                 |                              | 2SB1260      |
| R 962                                     |                  |  | RS1/10S363J  | Q 1601 1602                               |                 |                              | 2SD1781K     |
| R 964                                     |                  |  | RD1/4PS473JL | Q 1603                                    |                 |                              | 2SB709A      |
| R 965                                     |                  |  | RD1/4PS273JL | D 1601                                    |                 |                              | MA151WA-MN   |
| R 966                                     |                  |  | RS1/10S103J  | D 1701 1702 1703 1704                     |                 |                              | SC016-2      |
| R 981                                     |                  |  | RD1/4PS471JL | D 1801 1802                               |                 | Chip LED                     | CL200IRX     |
| R 982                                     |                  |  | RD1/4PS221JL | L 1601                                    |                 | Inductor                     | LCTBR39K2125 |
| R 983                                     |                  |  | RS1/10S392J  | X 1601                                    |                 | Crystal Resonator            | CSS1067      |
| CAPACITORS                                |                  |  |              | S 1801 1802                               |                 | Switch(Home,Clamp)           | CSN1028      |
| C 451 452                                 |                  |  | CEAS4R7M25   | VR1001                                    |                 | Semi-fixed 2.2k $\Omega$ (B) | CCP1177      |
| C 471 472 481 482 861                     |                  |  | CEAS100M16   | VR1002                                    |                 | Semi-fixed 22k $\Omega$ (B)  | CCP1183      |
| C 473 474                                 |                  |  | CCSQCH560J50 | VR1003 1004                               |                 | Semi-fixed 47k $\Omega$ (B)  | CCP1185      |
| C 475 951 963                             | 1000 $\mu$ F/16V |  | CCH1149      |   |                 |                              |              |
| C 476 477                                 |                  |  | CKSQYB393K25 | R 1001                                    |                 |                              | RS1/BS100J   |
| C 483 484 485 486 491 492 553 567 568 569 |                  |  | CEA100M16LL  | R 1002                                    |                 |                              | RS1/BS120J   |
| C 487 488                                 |                  |  | CKSYB224K16  | R 1003 1201 1307 1309                     |                 |                              | RS1/16S103J  |
| C 489 490                                 |                  |  | CKSQYB272K50 | R 1004 1013 1024 1025 1311 1315 1318 1708 |                 |                              | RS1/16S102J  |
| C 493 494 506 507                         |                  |  | CKSQYB223K25 | R 1005                                    |                 |                              | RS1/16S823J  |
| C 495 496                                 |                  |  | CKSQYB562K50 | R 1006                                    |                 |                              | RS1/16S182J  |
| C 497 498 499 500                         |                  |  |              | R 1007                                    |                 |                              | RS1/16S333J  |
| C 501 505 509 512 517                     |                  |  | CCSQCH330J50 | R 1011 1012                               |                 |                              | RS1/16S683J  |
| C 502 607 982                             |                  |  | CCSQCH101J50 | R 1014 1015 1310                          |                 |                              | RS1/16S473J  |
| C 504 510 514 523 772 952 954             |                  |  | CKSQYB473K25 | R 1018                                    |                 |                              | RS1/16S622J  |
| C 511                                     |                  |  | CCSQCH681J50 | R 1019                                    |                 |                              | RS1/16S563J  |
| C 513                                     | 0.047 $\mu$ F    |  | CCG1008      | R 1020                                    |                 |                              | RS1/16S822J  |
| C 515                                     |                  |  | CFTNA474J50  | R 1021                                    |                 |                              | RS1/16S513J  |
| C 516                                     |                  |  | CEA4R7M35LL  | R 1022                                    |                 |                              | RS1/16S133J  |
| C 518 519                                 |                  |  | CCSQCH120J50 | R 1027                                    |                 |                              | RS1/16S183J  |
| C 520                                     | 4.7 $\mu$ F/16V  |  | CCH1165      | R 1028                                    |                 |                              | RS1/16S822J  |
| C 551 552 554 555 606                     |                  |  | CKSQYB102K50 | R 1301 1302                               |                 |                              | RS1/16S222J  |
| C 556                                     | 3300 $\mu$ F/16V |  | CCH1150      | R 1303 1606 1607                          |                 |                              | RS1/16S223J  |
| C 557 558 601 609 956                     |                  |  | CKSQYB104K25 | R 1304                                    |                 |                              | RS1/16S123J  |
| C 559 560 561 562 563 564 565 566         |                  |  | COMA104J50   | R 1305 1306 1705                          |                 |                              | RS1/16S332J  |
| C 570 608                                 |                  |  | CEA100M16LL  | R 1308                                    |                 |                              | RS1/16S163J  |
| C 571 572 573 574                         |                  |  | CCSQCH220J50 | R 1314                                    |                 |                              | RS1/16S0R0J  |
| C 575                                     |                  |  | CEAS4R7M25   | R 1317                                    |                 |                              | RS1/16S473J  |
| C 603                                     |                  |  | CKSQYB104K25 | R 1601                                    |                 |                              | RS1/16S301J  |
| C 604 605                                 |                  |  | CCSQCH150J50 | R 1604 1605                               |                 |                              | RS1/16S102J  |
| C 610                                     |                  |  | CKSQYB104K25 | R 1608 1609                               |                 |                              | RS1/16S162J  |
|   |                  |  |              | R 1610                                    |                 |                              | RS1/16S103J  |
|   |                  |  |              | R 1801 1802                               |                 |                              | RS1/8S821J   |

# DEH-605RDS, 505SDK, 505, 405SDK, 405

| =====Circuit Symbol & No. Part Name=====                        | Part No.          | =====Circuit Symbol & No. Part Name=====        | Part No.                      |
|---|-------------------|---|-------------------------------|
| <b>CAPACITORS</b>   |                   |   |                               |
| C 1001 1008 1010 1011 1303                                      | CKSRYB102K50      | Unit Number : CWX1662(DEH-505SDK,505)           |                               |
| C 1002 1609 1706  | CEV101M6R3        | Unit Name : Key Board Unit                      |                               |
| C 1003  | CKSQYB104K16      | <b>MISCELLANEOUS</b>                            |                               |
| C 1004  | CEV470M6R3        | IC 921  |                               |
| C 1005  | CCSRCH101J50      | IC 922  | (DEH-505SDK,505) LC7582E      |
| C 1006  | CKSRYB561K50      | D 921 922 923                                   | RPM-678CBR                    |
| C 1007 1704   | CKSYB334K16       | IL 921 922 923                                  | MA153-MC                      |
| C 1009  | CCSRCH181J50      | IL 924 925 926                                  | CEL1295                       |
| C 1012 1307 1310 1605 1608                                      | CKSRYB103K50      | Lamp 14V 40mA                                   | CEL1297                       |
| C 1013  | CKSRYB472K50      | LCD901  | Lamp 14V 40mA                 |
| C 1014  | CCSRCH220J50      | LCD   | CAW1229                       |
| C 1015 1016 1017 1018 1201 1202                                 | CKSYF105Z16       | <b>RESISTORS</b>                                |                               |
| C 1021  | CKSYB104K16       | R 921   | (DEH-505SDK,505) RS1/10S470J  |
| C 1022  | CKSRYB332K50      | R 923 926 930 934                               | RS1/8S822J                    |
| C 1023  | CKSRYB561K50      | R 924 927 931 935                               | RS1/10S133J                   |
| C 1301 1302   | CKSRYF883Z25      | R 925 928 932 936                               | RS1/10S223J                   |
| C 1304  | CKSRYB152K50      | R 929 933 937                                   | RS1/10S683J                   |
| C 1305  | CKSRYB271K50      | R 938 939                                       | RS1/10S104J                   |
| C 1308  | CKSRYF103Z50      | R 940 941 942                                   | RS1/10S103J                   |
| C 1309  | CEV470M16         | <b>CAPACITORS</b>                               |                               |
| C 1601  | CCSRCH151J50      | C 921   | (DEH-505SDK,505) CEA470M6R3LS |
| C 1602  | CCSRCH100D50      | C 922   | CCSQCH301J50                  |
| C 1603 1604 1705  | CKSYB224K16       | C 923   | CKSQYF104Z25                  |
| C 1606 1607   | CCSRCH090D50      | C 924   | CKSQYF224Z25                  |
| C 1612  | CEV220M6R3        | C 925   | CKSQYB103K50                  |
| C 1613 1614   | CEV4R7M35         | Unit Number :<br>Unit Name : Detector P.C.Board |                               |
| C 1701 1702   | CCSRCH100D50      | P 1 2   | Photo Transistor              |
| C 1703  | CEV220M16         |   | PT4800                        |
| Unit Number : CWX1661(DEH-605RDS)<br>Unit Name : Key Board Unit |                   |   |                               |
| <b>MISCELLANEOUS</b>  |                   |   |                               |
| IC 901  |                   |   |                               |
| Q 901 902   | PD6122A           | M 1   | Motor Unit(Spindle) CXA5703   |
| Q 903   | 2SB1132           | M 2   | Motor Unit(Carriage) CXA4649  |
| D 901 902   | UN2211            | M 3   | Motor Unit(Loading) CXA6456   |
| D 903   | MA153-MC          |   | PU Unit CGY1031               |
| L 901   | MA3047M           |   |                               |
| X 901   | Coil              | LCTB150K3216                                    |                               |
| IL 901 902 903  | Ceramic Resonator | CSS1084   |                               |
| IL 904 905 906  | Lamp 14V 40mA     | CEL1297   |                               |
| LCD901  | Lamp 14V 40mA     | CEL1295   |                               |
|   | LCD               | CAW1228   |                               |
| <b>RESISTORS</b>  |                   |   |                               |
| R 901 902 903 908   | RS1/8S222J        |   |                               |
| R 904 906   | RS1/10S472J       |   |                               |
| R 905 907   | RS1/10S332J       |   |                               |
| R 909 910   | RS1/8S471J        |   |                               |
| R 911 912 913 914 915 916 917 918 919                           | RS1/10S471J       |   |                               |
| R 920   | RS1/10S121J       |   |                               |
| <b>CAPACITORS</b>   |                   |   |                               |
| C 901 902 903 904   | CKSQYB103K25      |   |                               |

- The DEH-505SDK, DEH-505, DEH-405SDK and DEH-405 Parts Lists enumerate the parts which differ from those enumerated in the DEH-605RDS Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-605RDS Parts List is given on page 1-42.

Tuner Amp Unit

| Circuit Symbol & No. | DEH-605RDS<br>Part No. | DEH-505SDK<br>Part No. | DEH-505<br>Part No. | DEH-405SDK<br>Part No. | DEH-405<br>Part No. |
|----------------------|------------------------|------------------------|---------------------|------------------------|---------------------|
| Tuner Amp Unit       | CWX1648                | CWX1649                | CWX1651             | CWX1650                | CWX1652             |
| IC601                | PD4483B                | PDR009B                | PDR009B             | PDR009B                | PDR009B             |
| IC771                | CWV1044                | CWV1045                | .....               | CWV1045                | .....               |
| Q455,456,771         | 2SC2712                | 2SC2712                | .....               | 2SC2712                | .....               |
| Q601                 | DTC114EK               | DTC114EK               | .....               | DTC114EK               | .....               |
| Q773                 | 2SC2712                | .....                  | .....               | .....                  | .....               |
| Q851,852             | .....                  | 2SC2712                | 2SC2712             | .....                  | .....               |
| D771                 | 1SS133                 | .....                  | .....               | .....                  | .....               |
| D772                 | MTZ4R7B                | MTZ4R7B                | .....               | MTZ4R7B                | .....               |
| VR771                | VRMB6VS222             | .....                  | .....               | .....                  | .....               |
| BZ601                | CPV1011                | CPV1011                | .....               | CPV1011                | .....               |
| X601                 | CSS1023                | CSS1065                | CSS1065             | CSS1065                | CSS1065             |
| FM/AM Tuner Unit     | CWE1313                | CWE1311                | CWE1311             | CWE1311                | CWE1311             |
| R605,606,780         | RS1/10S102J            | RS1/10S102J            | .....               | RS1/10S102J            | .....               |
| R607,779             | .....                  | RS1/10S0R0J            | .....               | RS1/10S0R0J            | .....               |
| R608                 | .....                  | RS1/10S0R0J            | RS1/10S0R0J         | RS1/10S0R0J            | RS1/10S0R0J         |
| R609                 | .....                  | .....                  | .....               | RS1/10S0R0J            | RS1/10S0R0J         |
| R611                 | .....                  | .....                  | RS1/10S473J         | .....                  | RS1/10S473J         |
| R613                 | .....                  | RS1/10S473J            | RS1/10S473J         | .....                  | .....               |
| R614                 | .....                  | RS1/10S473J            | RS1/10S473J         | RS1/10S473J            | RS1/10S473J         |
| R615                 | .....                  | RS1/10S102J            | .....               | RS1/10S102J            | .....               |
| R636,637,638,639     | .....                  | RD1/4PS103JL           | RD1/4PS103JL        | RD1/4PS103JL           | RD1/4PS103JL        |
| R640,641,642,643     | .....                  | RS1/10S103J            | RS1/10S103J         | RS1/10S103J            | RS1/10S103J         |
| R644                 | .....                  | RS1/10S103J            | RS1/10S103J         | RS1/10S103J            | RS1/10S103J         |
| R648                 | RS1/10S682J            | RS1/10S0R0J            | RS1/10S0R0J         | RS1/10S0R0J            | RS1/10S0R0J         |
| R649                 | .....                  | RS1/10S105J            | RS1/10S105J         | RS1/10S105J            | RS1/10S105J         |
| R673                 | RD1/4PS103JL           | .....                  | .....               | .....                  | .....               |
| R771                 | RS1/10S471J            | RS1/10S471J            | .....               | RS1/10S471J            | .....               |
| R772                 | RS1/10S473J            | RS1/10S473J            | .....               | RS1/10S473J            | .....               |
| R773,774,775,776     | RS1/10S473J            | .....                  | .....               | .....                  | .....               |
| R777,778             | RS1/10S473J            | .....                  | .....               | .....                  | .....               |
| R781                 | RS1/10S152J            | RS1/10S152J            | .....               | RS1/10S152J            | .....               |

**DEH-605RDS, 505SDK, 505, 405SDK, 405**

| Circuit Symbol & No. | DEH-605RDS   | DEH-505SDK   | DEH-505      | DEH-405SDK   | DEH-405  |
|----------------------|--------------|--------------|--------------|--------------|----------|
|                      | Part No.     | Part No.     | Part No.     | Part No.     | Part No. |
| Tuner Amp Unit       | CWX1648      | CWX1649      | CWX1651      | CWX1650      | CWX1652  |
| R782                 | RS1/10S332J  | RS1/10S332J  | .....        | RS1/10S332J  | .....    |
| R783                 | RS1/10S102J  | .....        | .....        | .....        | .....    |
| R784                 | RS1/10S101J  | RS1/10S101J  | .....        | RS1/10S101J  | .....    |
| R851,852             | .....        | RD1/4PS821JL | RD1/4PS821JL | .....        | .....    |
| R853,854             | .....        | RS1/10S222J  | RS1/10S222J  | .....        | .....    |
| R855,856             | .....        | RS1/10S223J  | RS1/10S223J  | .....        | .....    |
| C604,605             | CCSQCH150J50 | .....        | .....        | .....        | .....    |
| C610                 | CKSQYB104K25 | .....        | .....        | .....        | .....    |
| C772                 | CKSQYB103K25 | CKSQYB103K25 | .....        | CKSQYB103K25 | .....    |
| C773                 | CEA100M16LL  | CEA100M16LL  | .....        | CEA100M16LL  | .....    |
| C851                 | .....        | CEAS100M16   | CEAS100M16   | .....        | .....    |
| C852                 | .....        | CEA100M16LL  | CEA100M16LL  | .....        | .....    |
| C853,854             | .....        | CCSQCH221J50 | CCSQCH221J50 | .....        | .....    |

# Service Manual

ORDER NO.  
**CRZ1563**

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HIGH POWER CD PLAYER WITH RDS TUNER

**DEH-605RDS** **EW,X1B/EW**

HIGH POWER CD PLAYER WITH FM/MW/LW TUNER

**DEH-505SDK** **GR**

**DEH-505** **EW,X1B/EW**

**DEH-405SDK** **GR**

**DEH-405** **EW,X1B/EW**

- See the service manual CX-540(CRT1574) for the CD mechanism description, disassembly and circuit description.

## CHAPTER 2

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#### CHAPTER 2

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## 1. PACKING METHOD

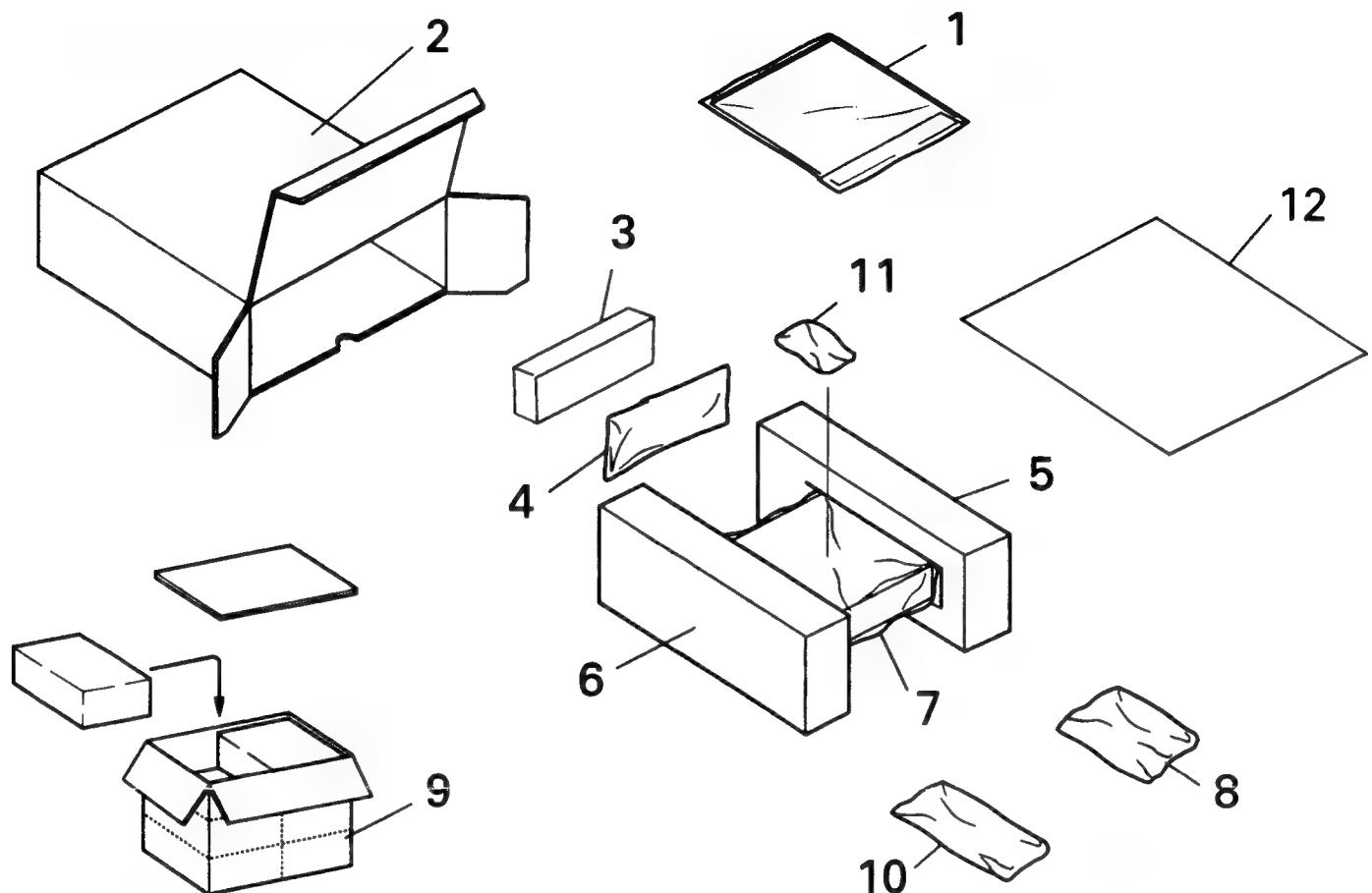


Fig.1

### ● Parts List(DEH-605RDS)

\* : Non Spare Part

| Mark | No. | Description         | Part No. |
|------|-----|---------------------|----------|
|      | 1-1 | Owner's Manual      | CRD1717  |
|      | 1-2 | Owner's Manual      | CRD1718  |
|      | 1-3 | Installation Manual | CRD1719  |
| *    | 1-4 | Card                | CRY-062  |
| *    | 1-5 | Passport            | CRY1013  |
| *    | 1-6 | Caution Card        | CRP1129  |
|      | 1-7 | Polyethylene Bag    | CEG1116  |
|      | 2   | Carton              | CHG2427  |
|      | 3   | Case                | CNS2269  |
|      | 4   | Cord Assy           | CDE4142  |
|      | 5   | Protector           | CHP1603  |
|      | 6   | Protector           | CHP1602  |
|      | 7   | Cover               | CEG1092  |
|      | 8   | Accessory Assy      | CEA1917  |
|      | 8-1 | Screw               | CBA1284  |

| Mark | No. | Description              | Part No. |
|------|-----|--------------------------|----------|
|      | 8-2 | Handle(X2)               | CNC4947  |
|      | 8-3 | Bush                     | CNV1009  |
| *    | 8-4 | Polyethylene Bag         | E36-615  |
|      | 9   | Contain Box              | CHL2427  |
|      | 10  | .....                    |          |
|      | 11  | .....                    |          |
|      | 12  | Spacer(except X1B model) | CHW1387  |

- The DEH-505SDK, DEH-505, DEH-405SDK and DEH-405 Parts Lists enumerate the parts which differ from those enumerated in the DEH-605RDS Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-605RDS Parts List is given on page 2-2.

| Mark | No. | Description         | DEH-605RDS | DEH-505SDK | DEH-505 | DEH-405SDK | DEH-405 |
|------|-----|---------------------|------------|------------|---------|------------|---------|
| #    | 1-1 | Owner's Manual      | CRD1717    | CRD1723    | CRD1720 | CRD1723    | CRD1720 |
|      | 1-2 | Owner's Manual      | CRD1718    | .....      | .....   | .....      | .....   |
|      | 1-5 | Passport            | CRY1013    | CRY1013    | .....   | CRY1013    | .....   |
|      | 2   | Carton              | CHG2427    | CHG2429    | CHG2428 | CHG2420    | CHG2419 |
|      | 9   | Contain Box         | CHL2427    | CHL2429    | CHL2428 | CHL2420    | CHL2419 |
|      | 10  | Accessory Assy      | .....      | CEA1473    | CEA1473 | .....      | .....   |
|      | 11  | Remote Control Assy | .....      | CXA6155    | CXA6155 | .....      | .....   |

#### Owner's Manual

| Model             | Part No. | Language  |
|-------------------|----------|---|
| DEH-605RDS        | CRD1717  | English, French, Italian, German, Dutch, Spanish, Portuguese                              |
|                   | CRD1718  | Swedish, Norwegian, Finnish   |
| DEH-505SDK,405SDK | CRD1723  | French, German  |
| DEH-505,405       | CRD1720  | English, French, Italian, German, Dutch, Spanish, Portuguese, Swedish, Norwegian, Finnish |

#### Installation Manual

| Model  | Part No. | Language  |
|--|----------|---|
| DEH-605RDS,<br>DEH-505SDK,505,<br>DEH-405SDK,405 | CRD1719  | English, French, Italian, German, Dutch, Spanish, Portuguese<br>Swedish, Norwegian, Finnish |

#### X1B/EW Model

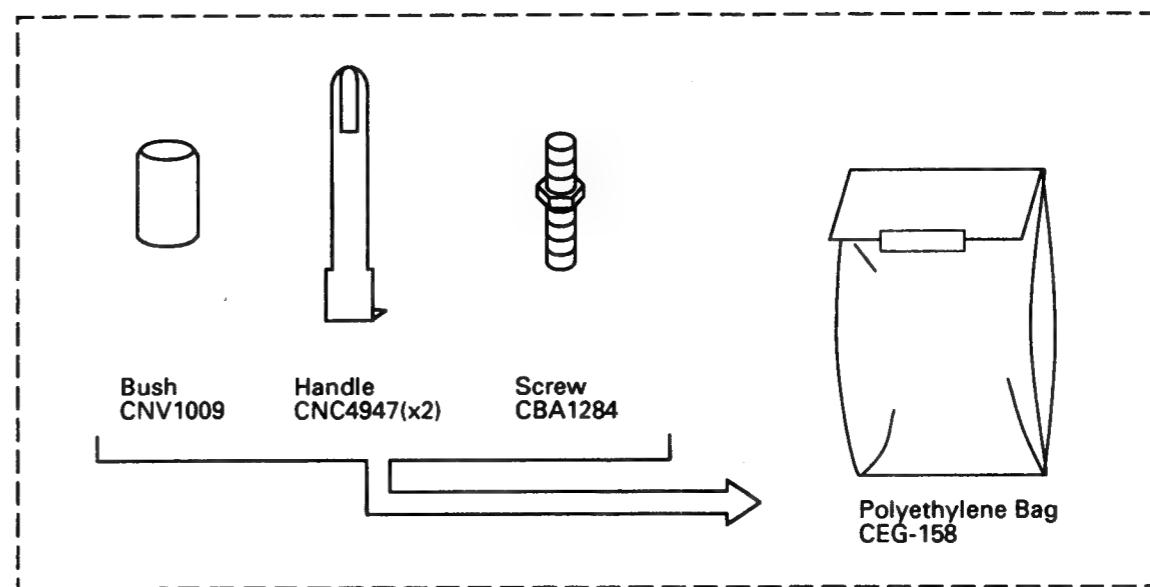
| Mark | No. | Description      | DEH-605RDS/EW | DEH-605RDS/X1B/EW |
|------|-----|------------------|---------------|-------------------|
| #    | 1-2 | Owner's Manual   | CRD1718       | .....             |
|      | 1-4 | Card             | CRY-062       | URY-001           |
|      | 1-5 | Passport         | CRY1013       | CRY1014           |
|      | 1-7 | Polyethylene Bag | CEG1116       | E36-618           |
|      | 7   | Cover            | CEG1092       | UEG-002           |
|      | 9   | Contain Box      | CHL2427       | UHD-002           |

| Mark | No. | Description      | DEH-505/EW | DEH-505/X1B/EW |
|------|-----|------------------|------------|----------------|
| #    | 1-4 | Card             | CRY-062    | URY-001        |
|      | 1-7 | Polyethylene Bag | CEG1116    | E36-618        |
|      | 7   | Cover            | CEG1092    | UEG-002        |
|      | 9   | Contain Box      | CHL2428    | UHD-002        |

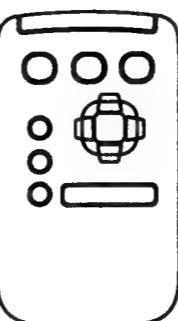
| Mark | No. | Description      | DEH-405/EW | DEH-405/X1B/EW |
|------|-----|------------------|------------|----------------|
| #    | 1-4 | Card             | CRY-062    | URY-001        |
|      | 1-7 | Polyethylene Bag | CEG1116    | E36-618        |
|      | 7   | Cover            | CEG1092    | UEG-002        |
|      | 9   | Contain Box      | CHL2419    | UHD-002        |

#### Accessory Assy

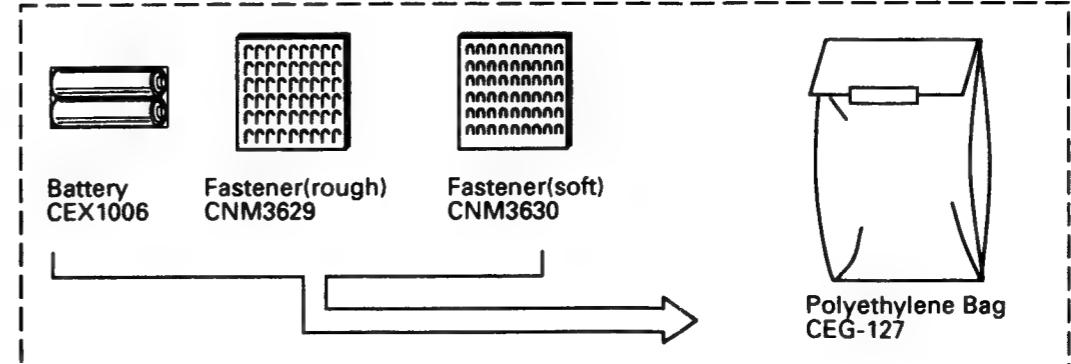
##### Accessory Assy CEA1917



##### Remote Control Assy CXA6155

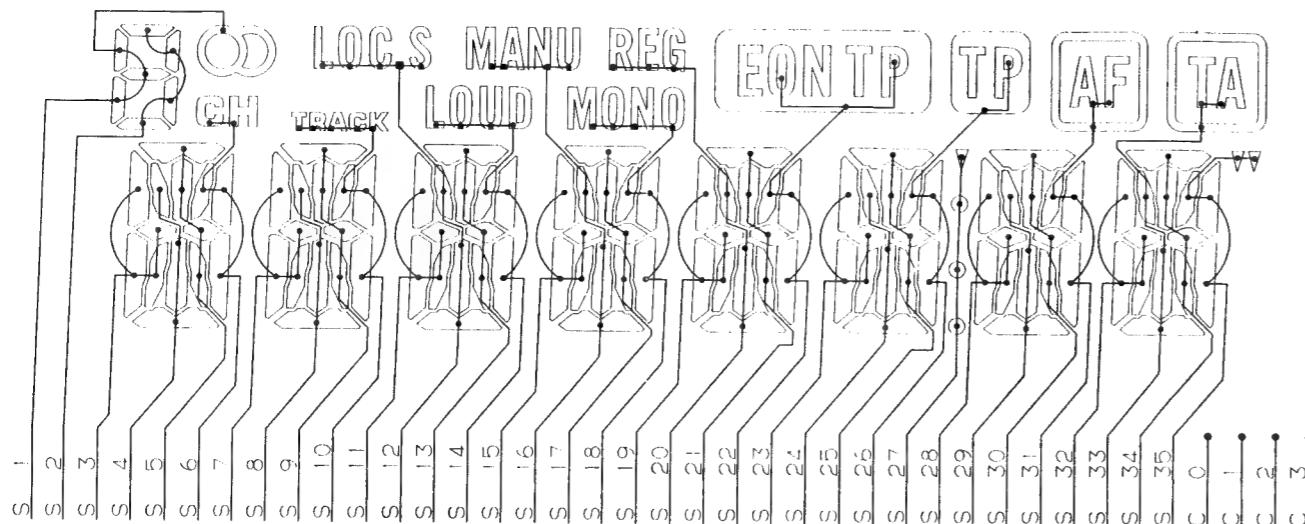


##### Accessory Assy CEA1473



● LCD(CAW1228).....DEH-605RDS

## **SEGMENT**



## COMMON

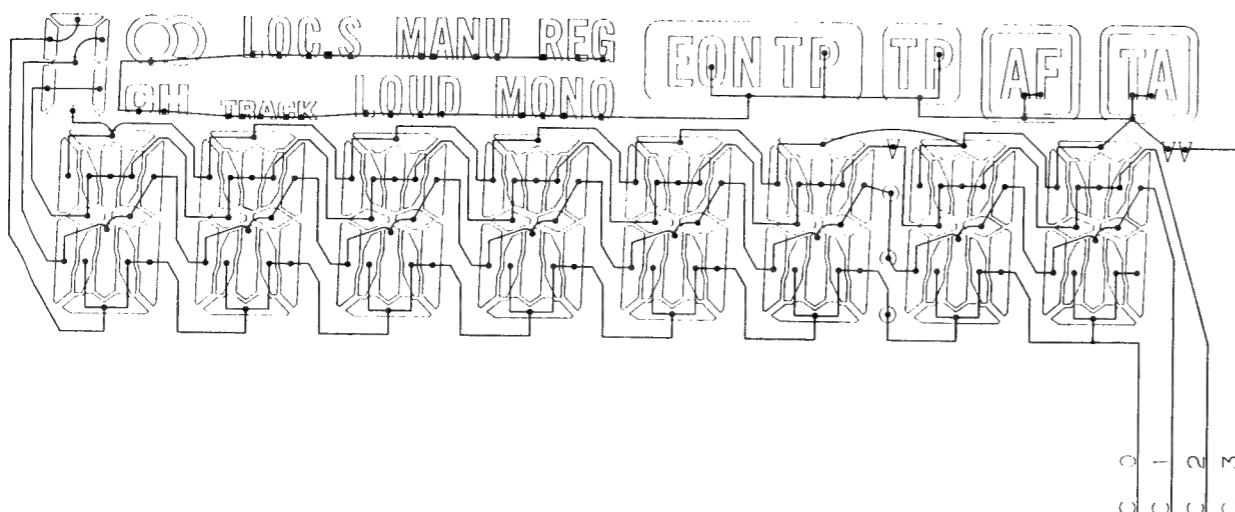
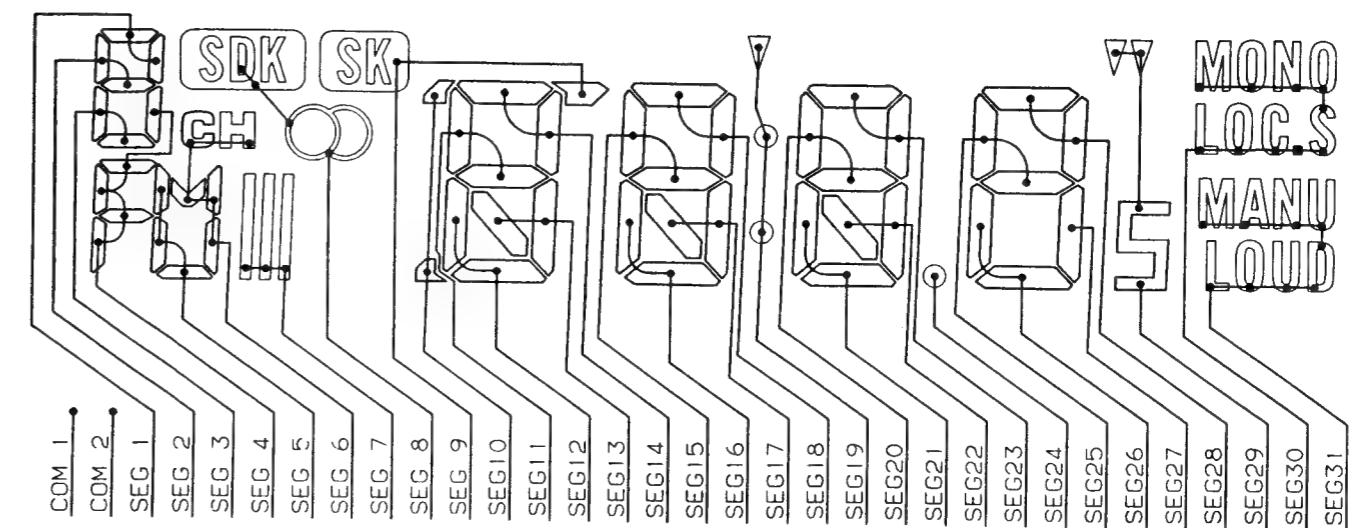


Fig.3

● LCD(CAW1229).....DEH-505SDK.505.405SDK.405

## SEGMENT



## COMMON

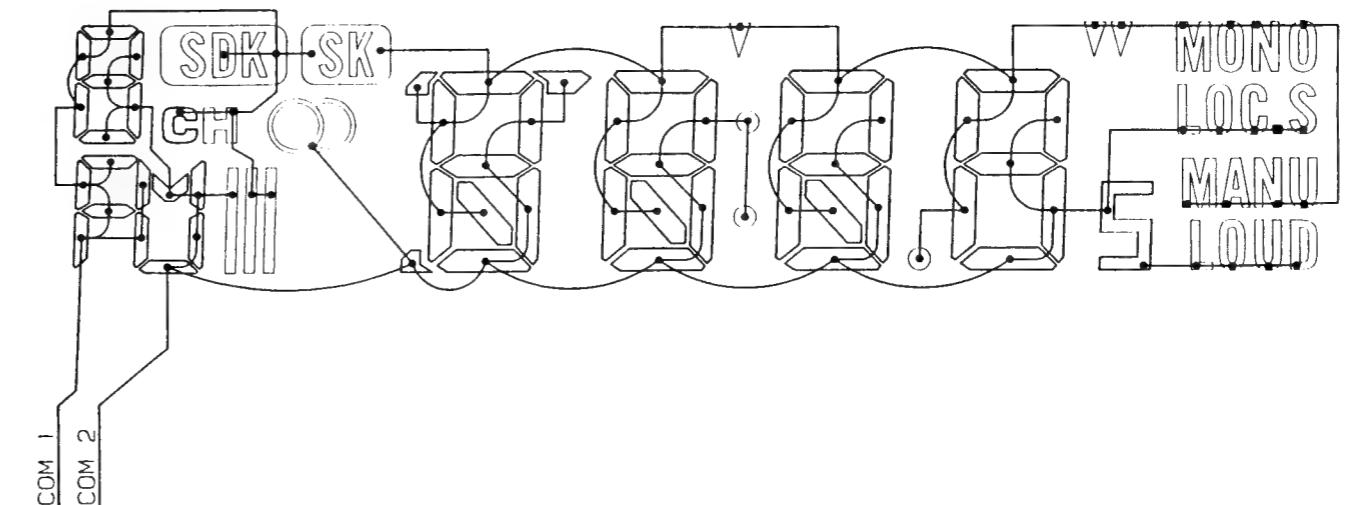


Fig.4

## 2. BLOCK DIAGRAM

### ● DEH-605RDS

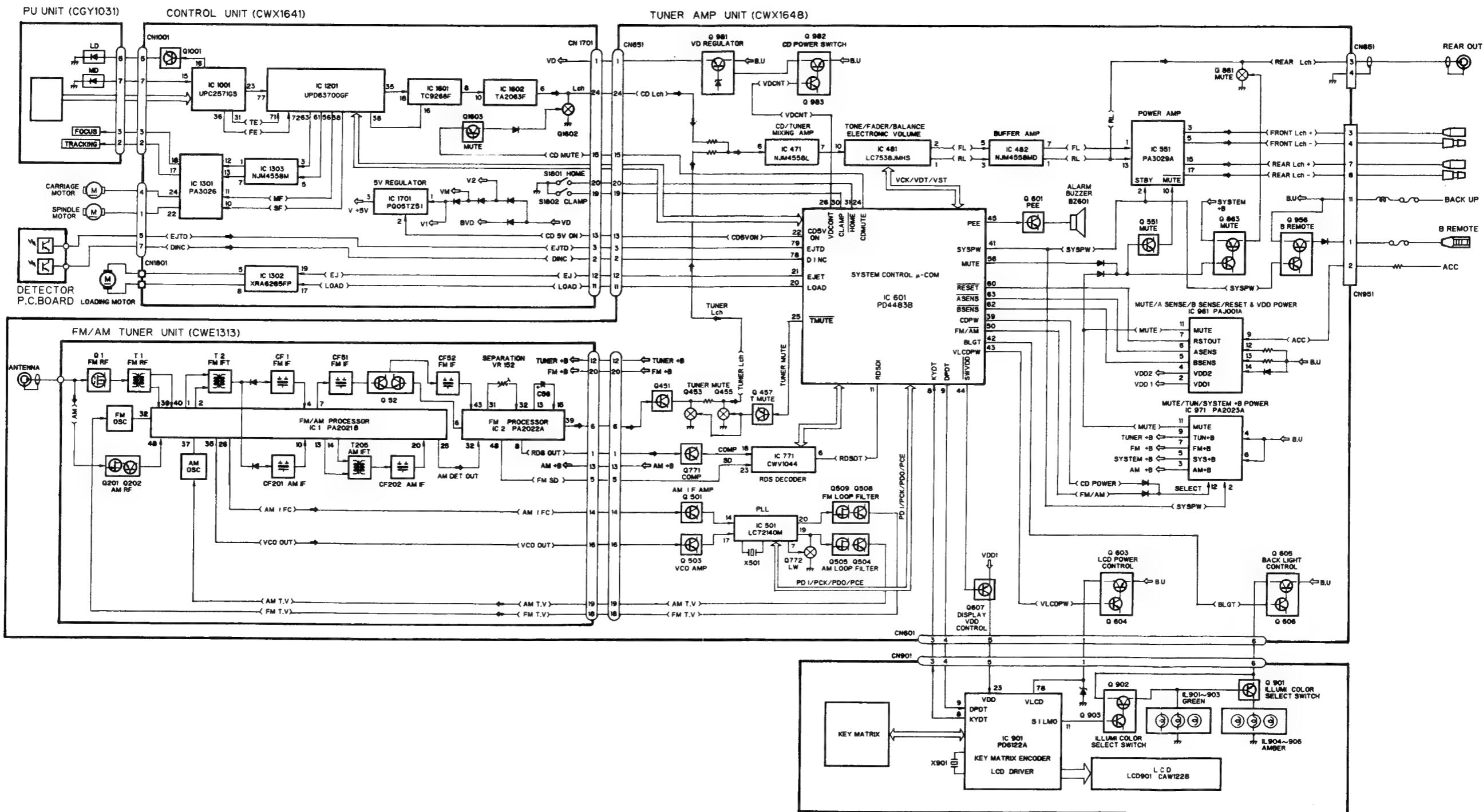


Fig.5

### **3. EXPLODED VIEW**

## ● Chassis (Parts List:Page 1-38)

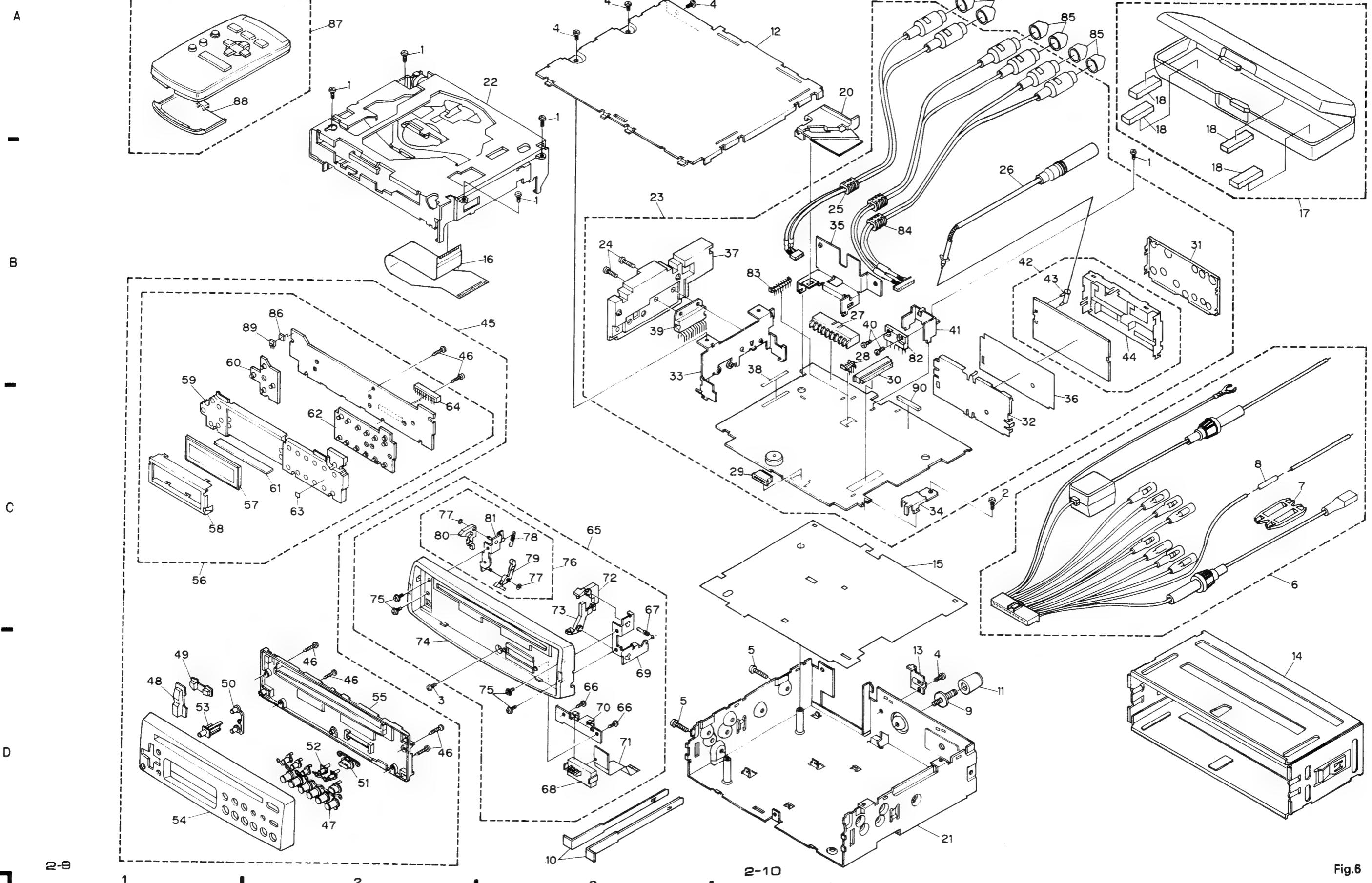


Fig.6

## ● CD Mechanism Module (Parts List:Page 1-39)

A

A

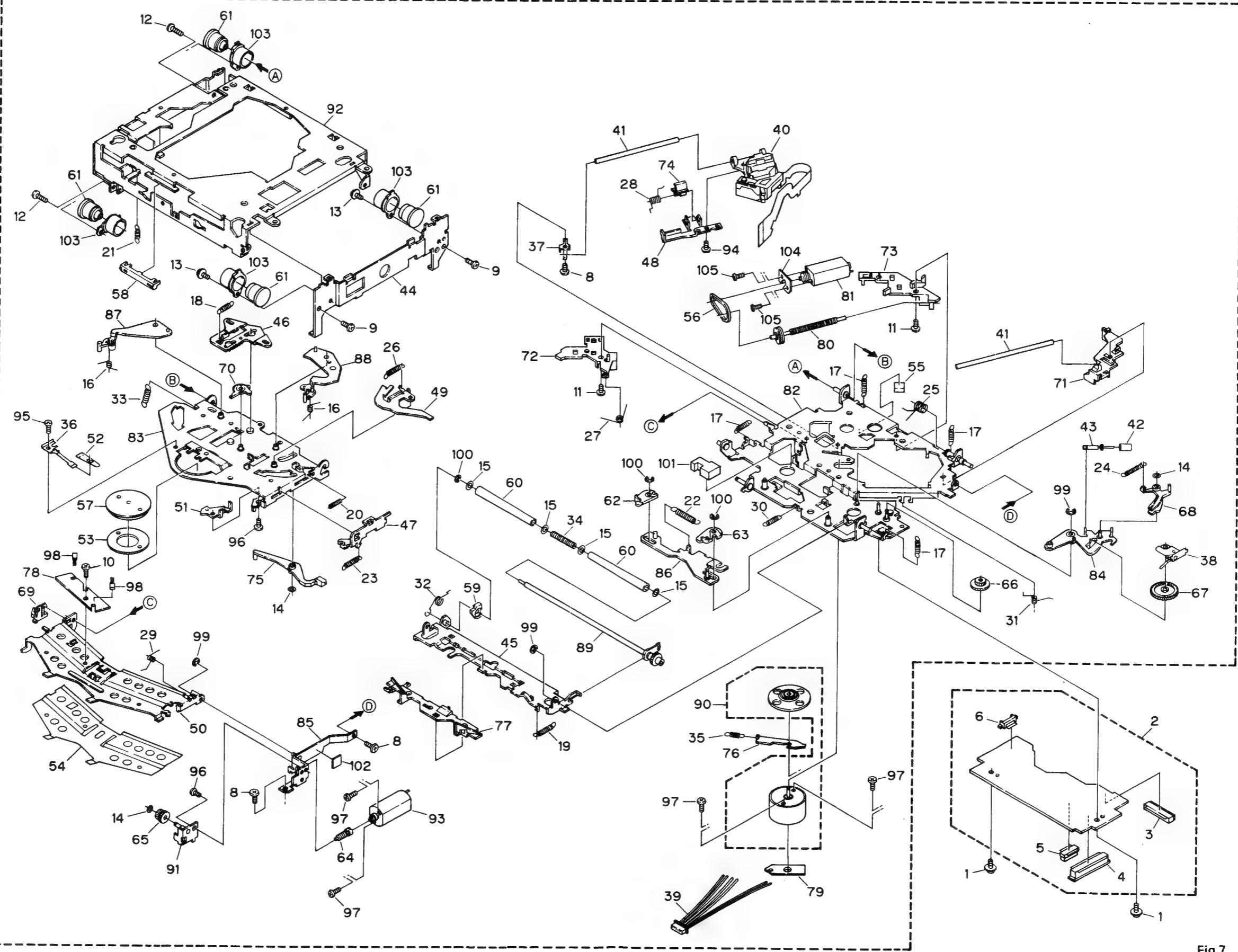
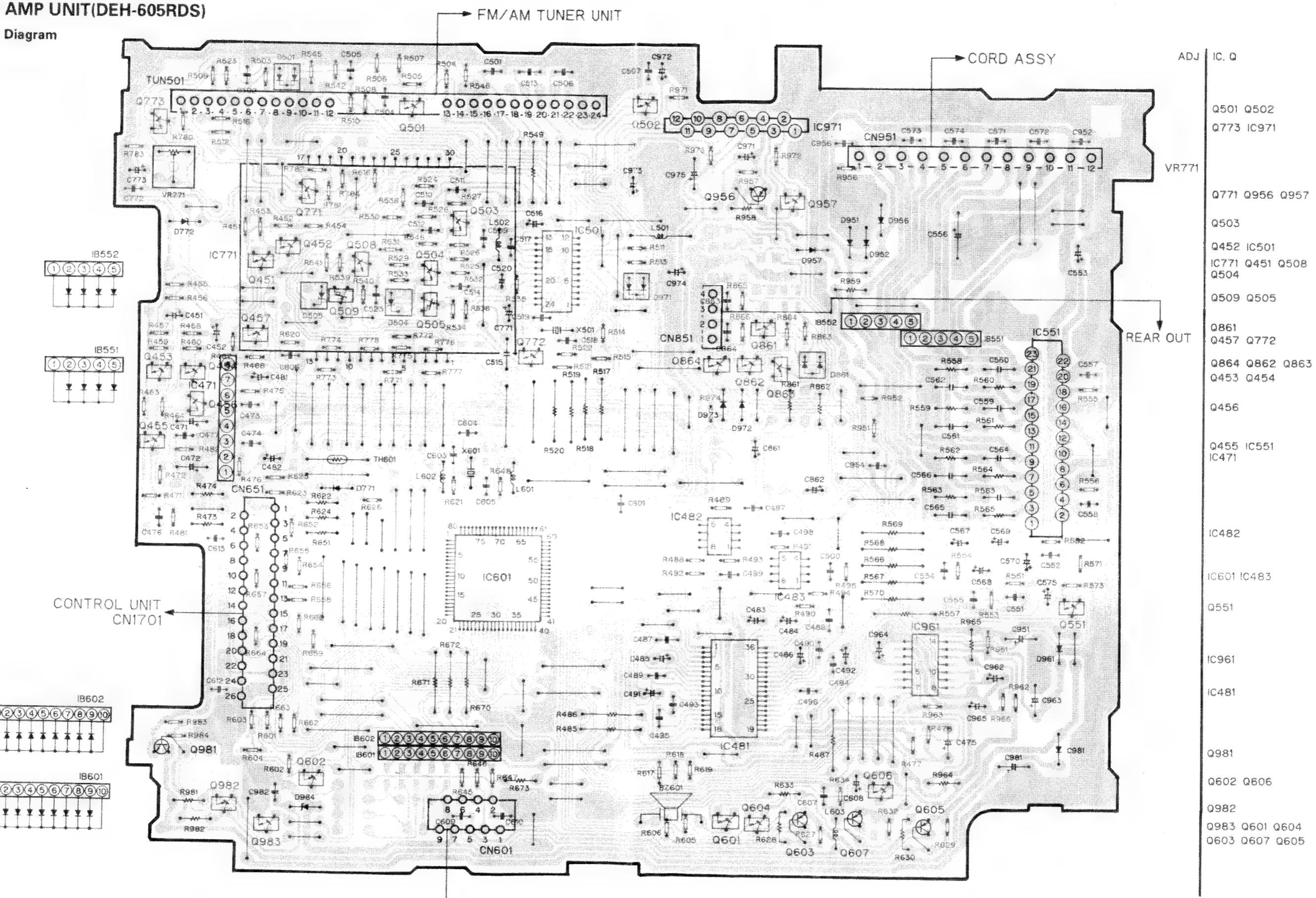


Fig.7

#### **4. CIRCUIT DIAGRAM AND PATTERN**

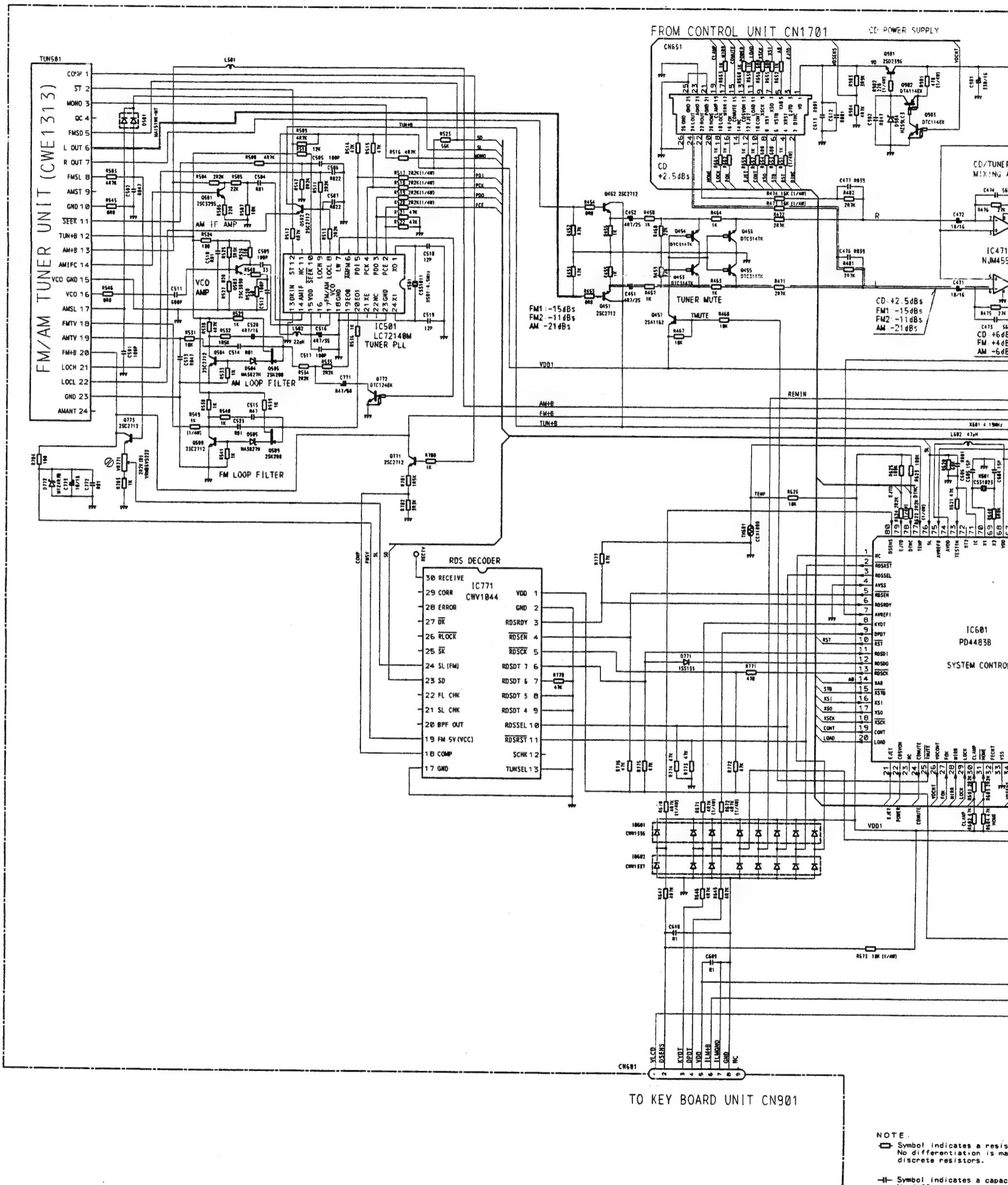
#### **4.1 TUNER AMP UNIT(DEH-605RDS)**

## ● Connection Diagram



## ● Circuit Diagram

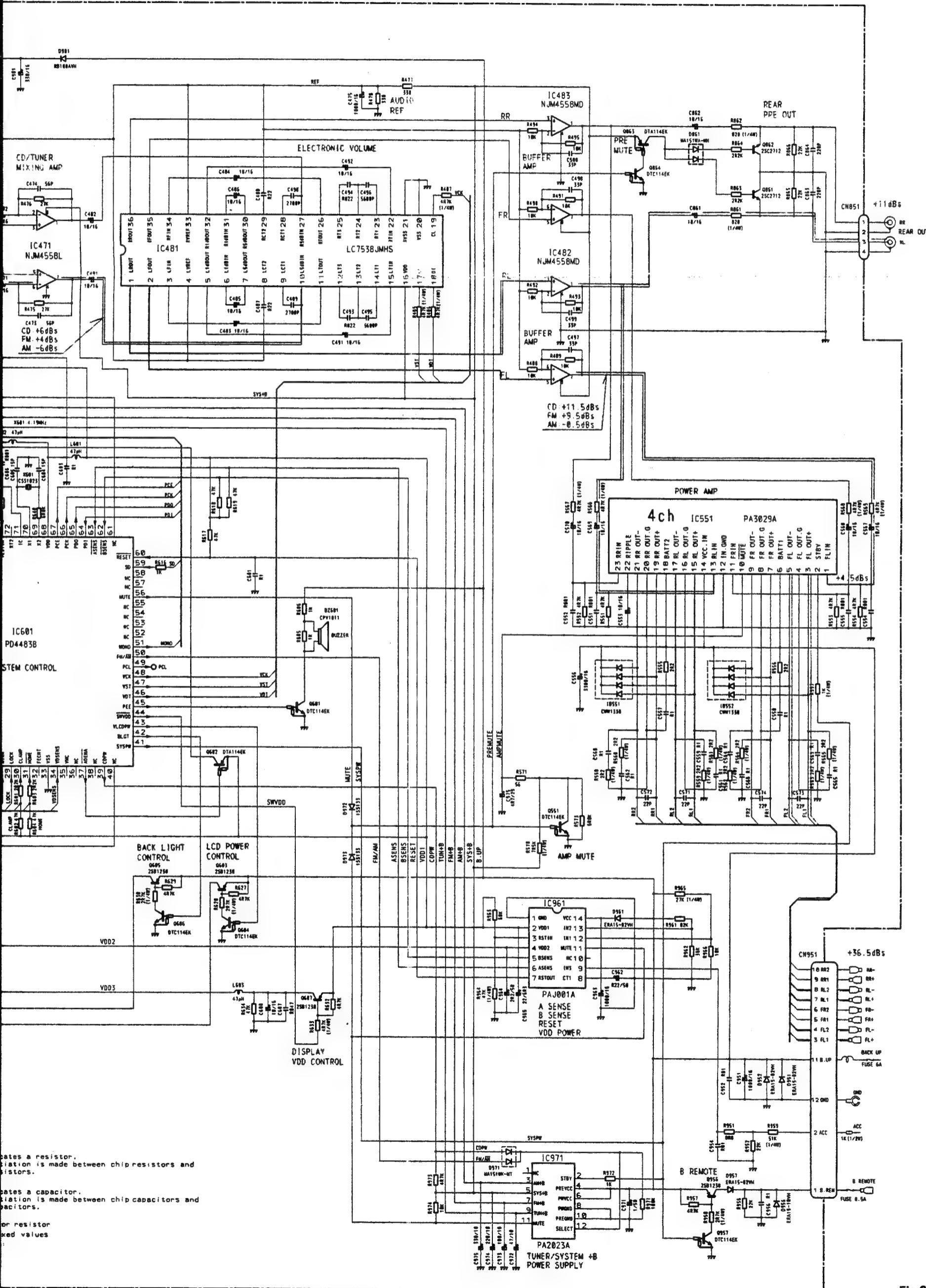
## TUNER AMP UNIT (CWX1648)



**NOTE:**  Symbol indicates a resistor. No differentiation is made between discrete resistors.

→ II- Symbol indicates a capacitor  
No differentiation is made  
between discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:  
2.2→R22  
0.022→R022



A

B

C

D

E

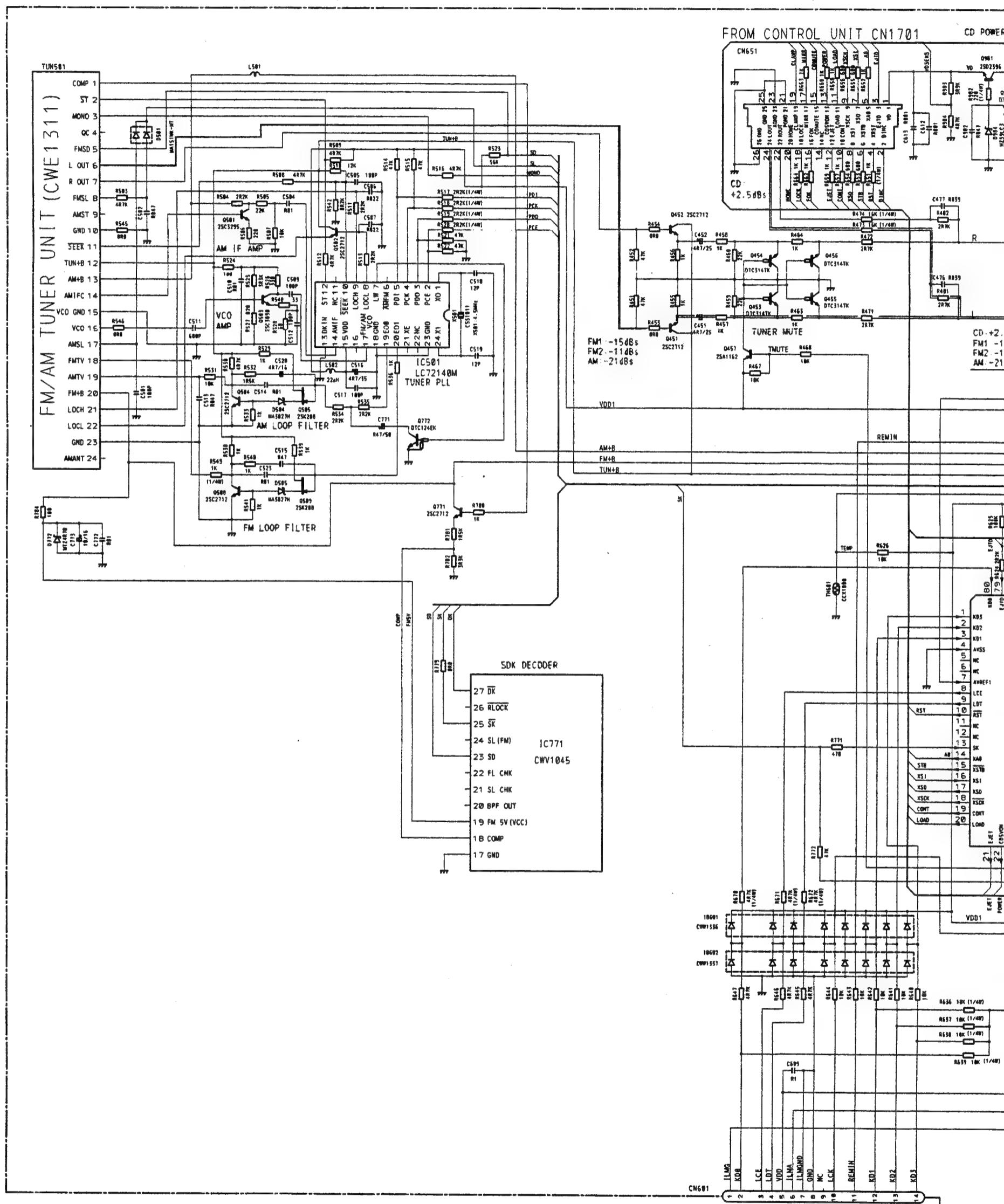
F

## 4.2 TUNER AMP UNIT(DEH-505SDK, 405SDK)

## ● Circuit Diagram

A

TUNER AMP UNIT (CWX1649) ··· DEH-505SDK/TUNER AMP UNIT (CWX1650) ··· DEH-405SDK

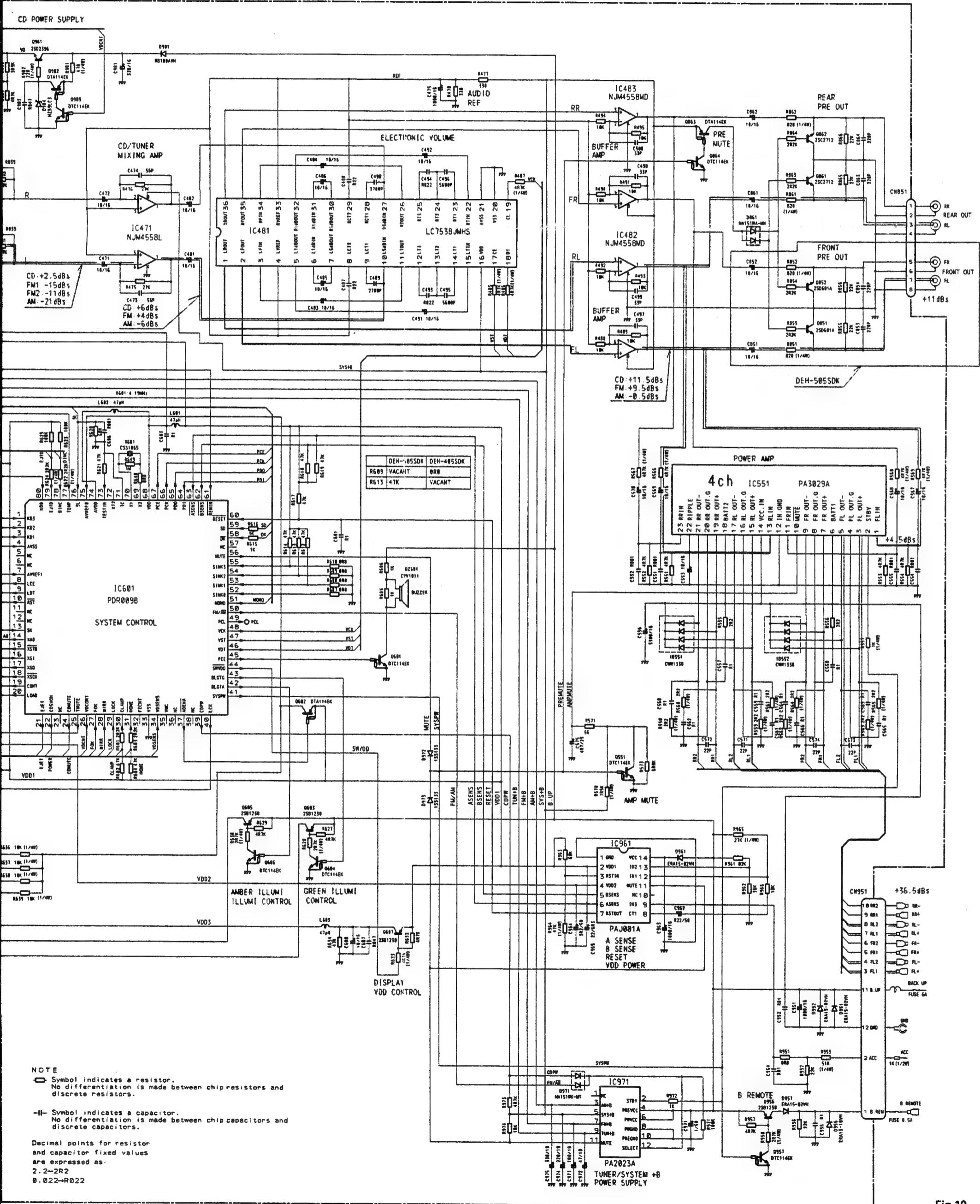


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NOTE  
---  
-II- S N d  
-III- S N d  
Decimals  
and  
are ex  
2.2-2  
0.022

5

SDK



## ● Connection Diagram

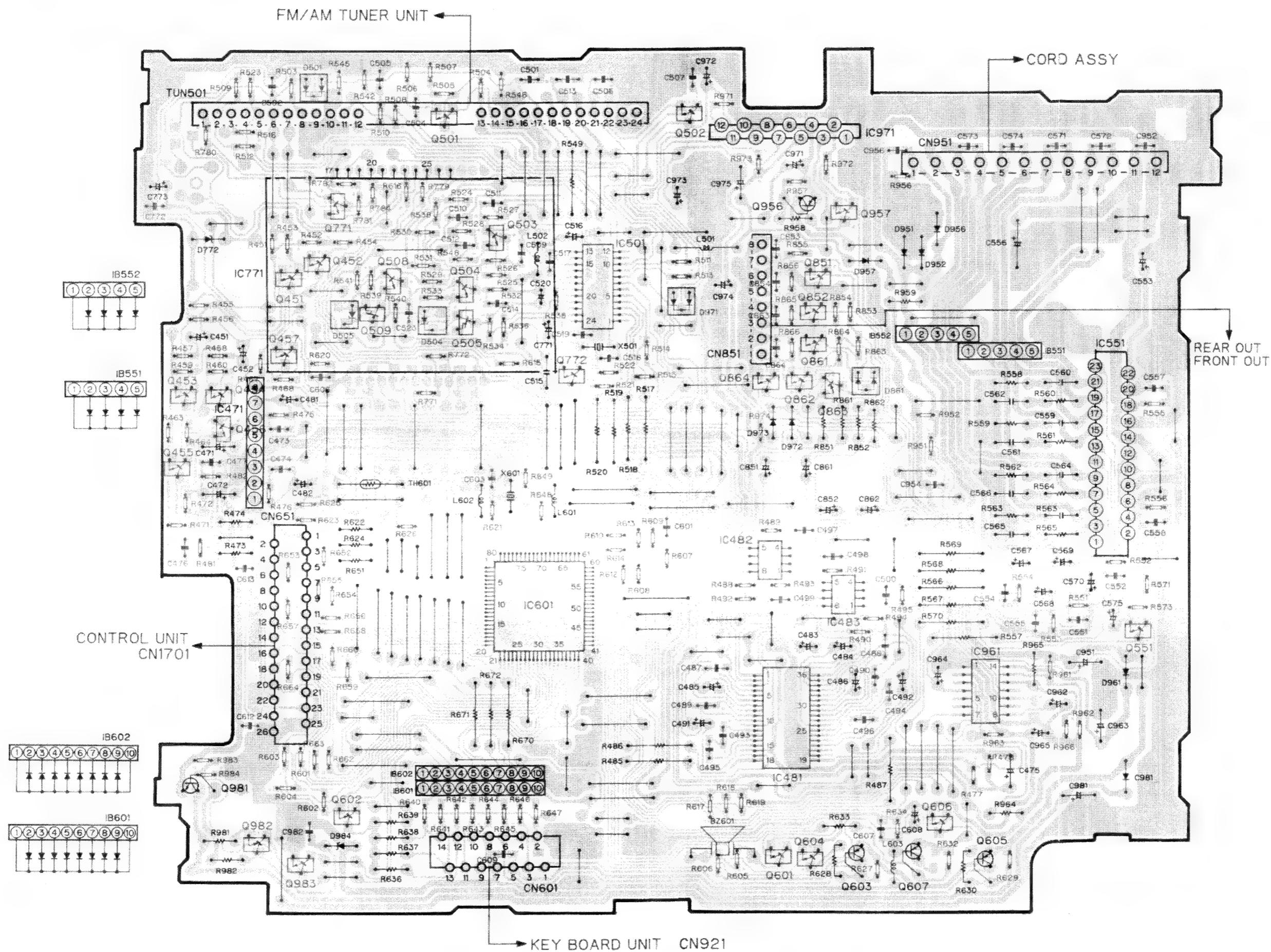
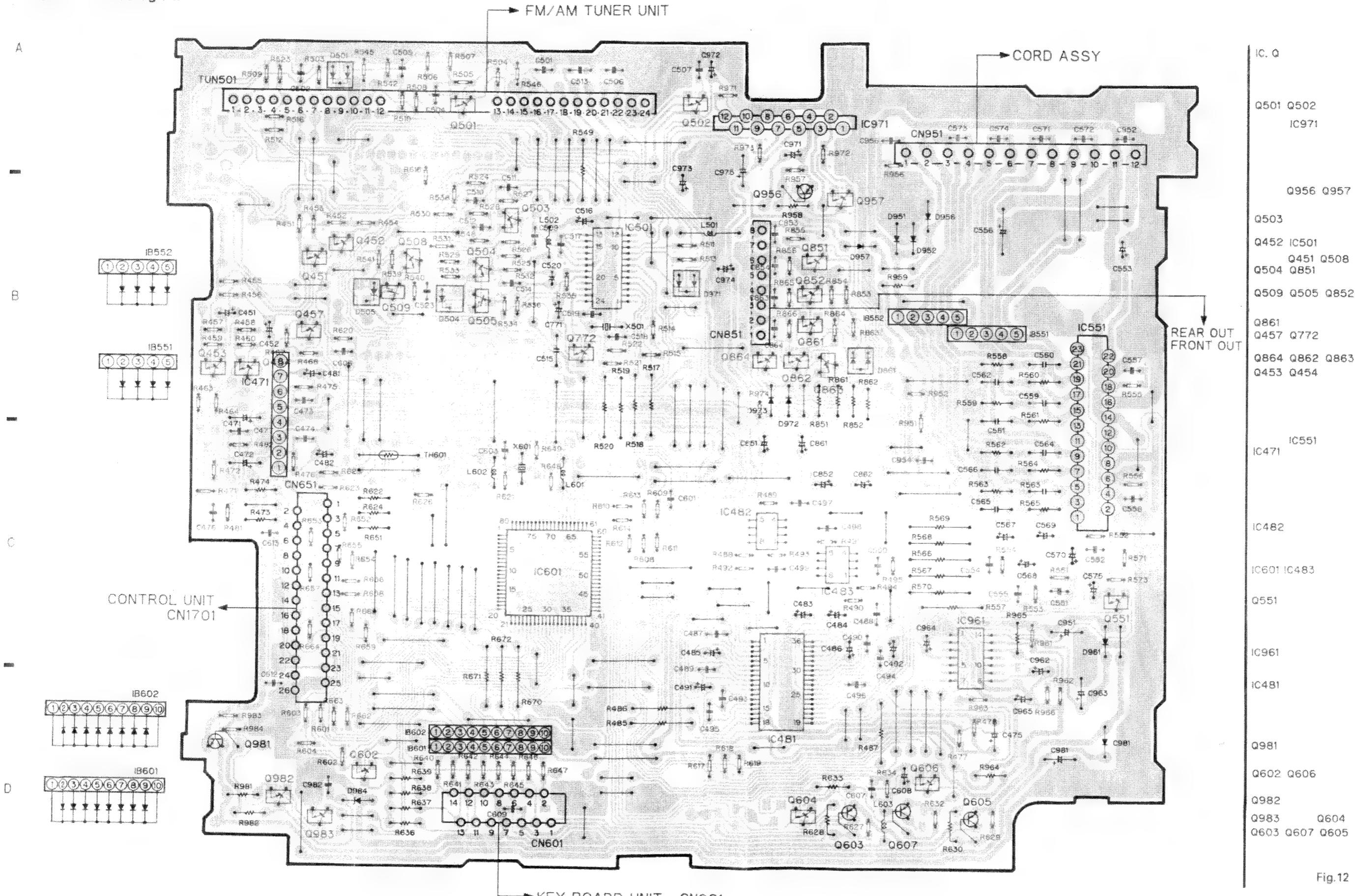


Fig. 11

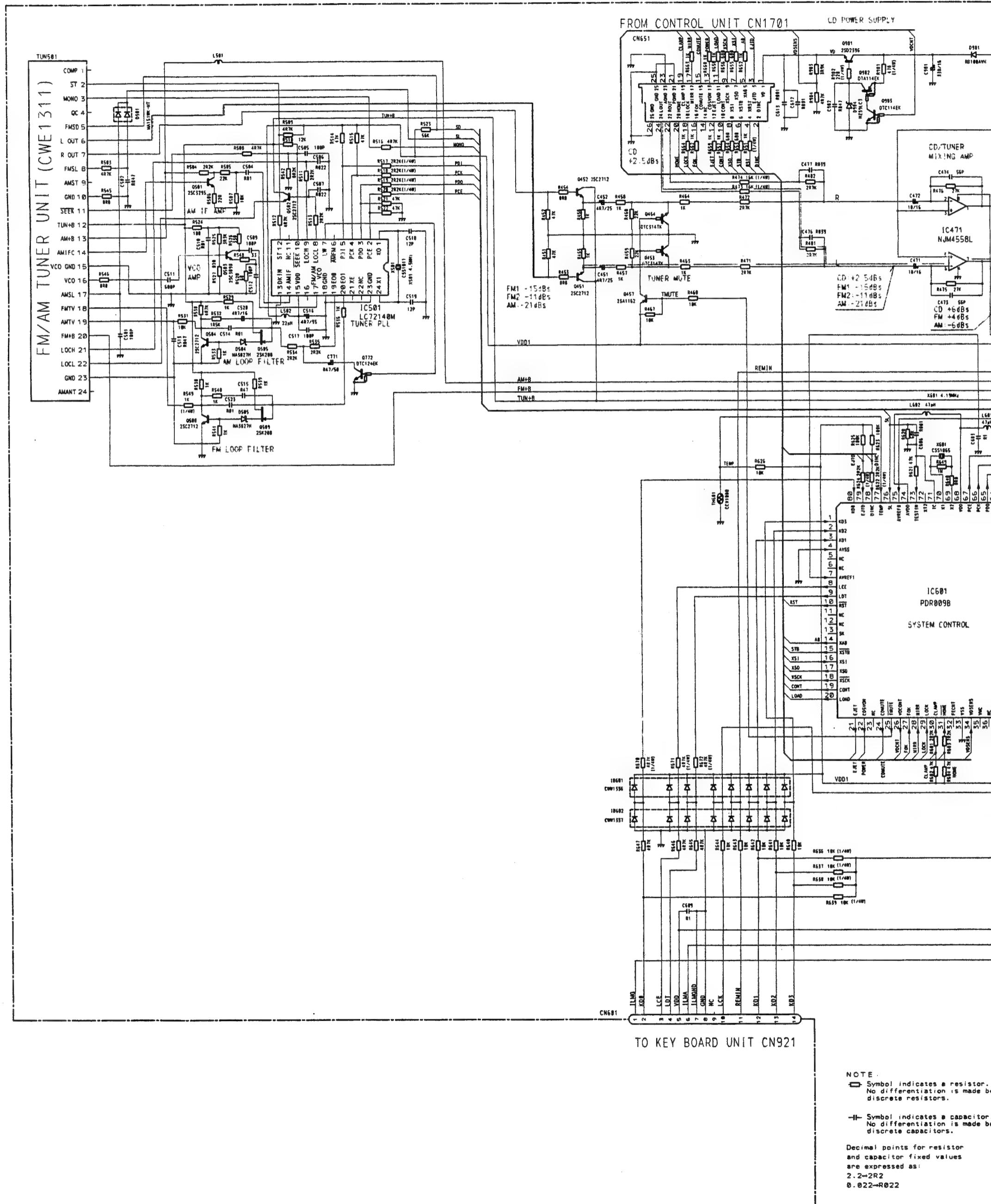
#### 4.3 TUNER AMP UNIT(DEH-505,405)

##### ● Connection Diagram



● Circuit Diagram

TUNER AMP UNIT (CWX1651) ··· DEH-505 / TUNER AMP UNIT (CWX1652) ··· DEH-405



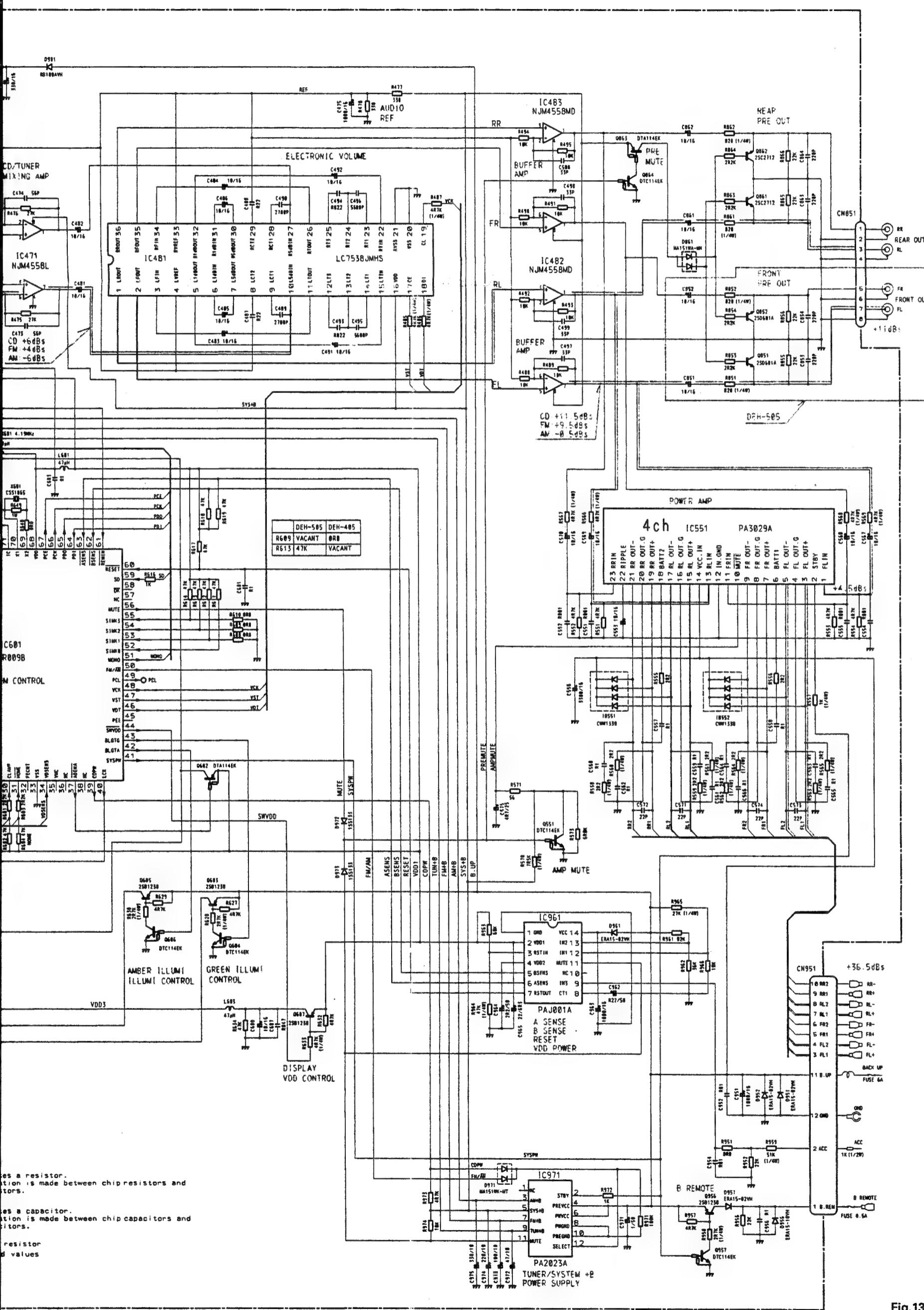
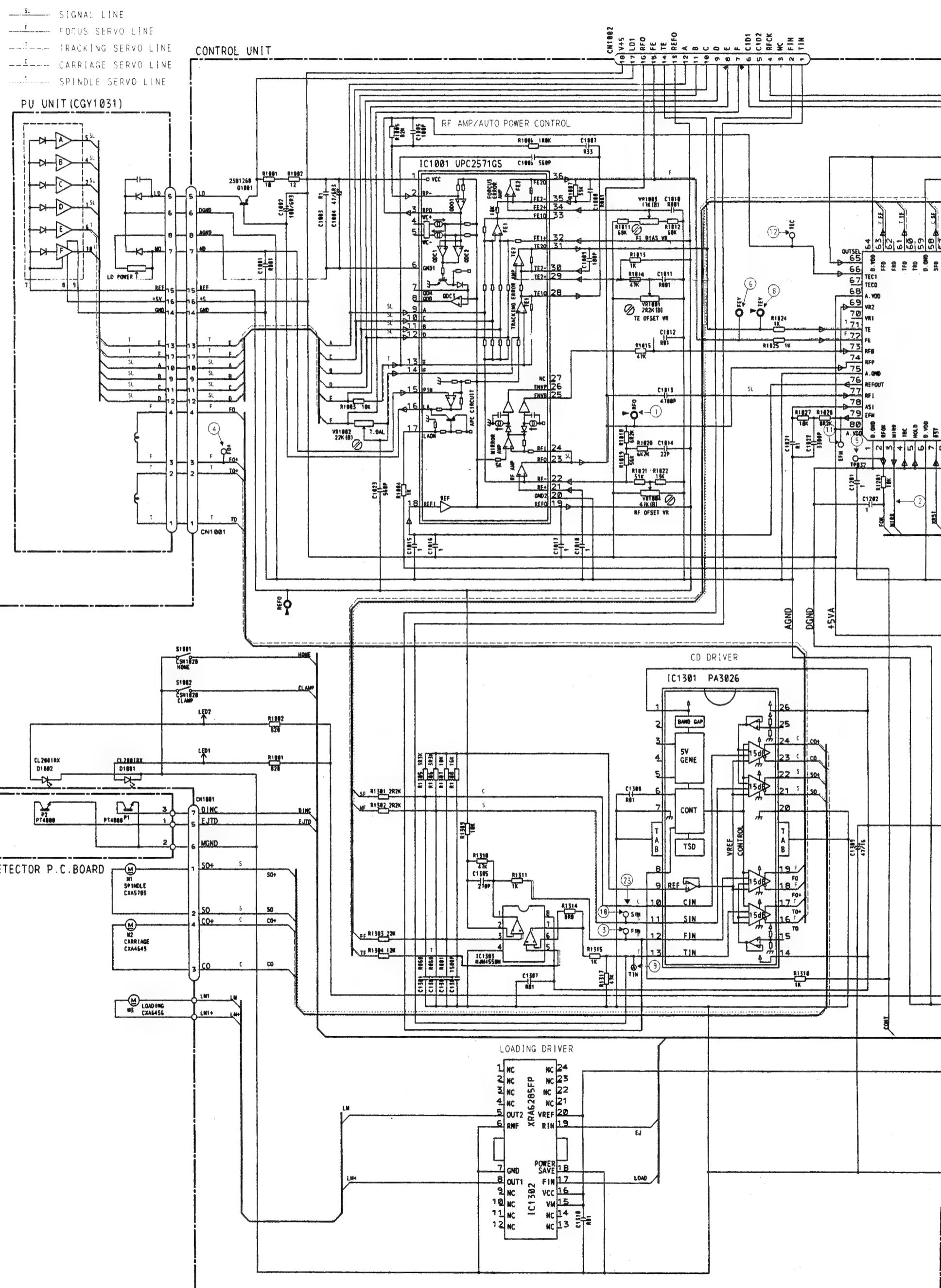


Fig.13

Pioneers

## 4.4 CD MECHANISM MODULE

## ● Circuit Diagram



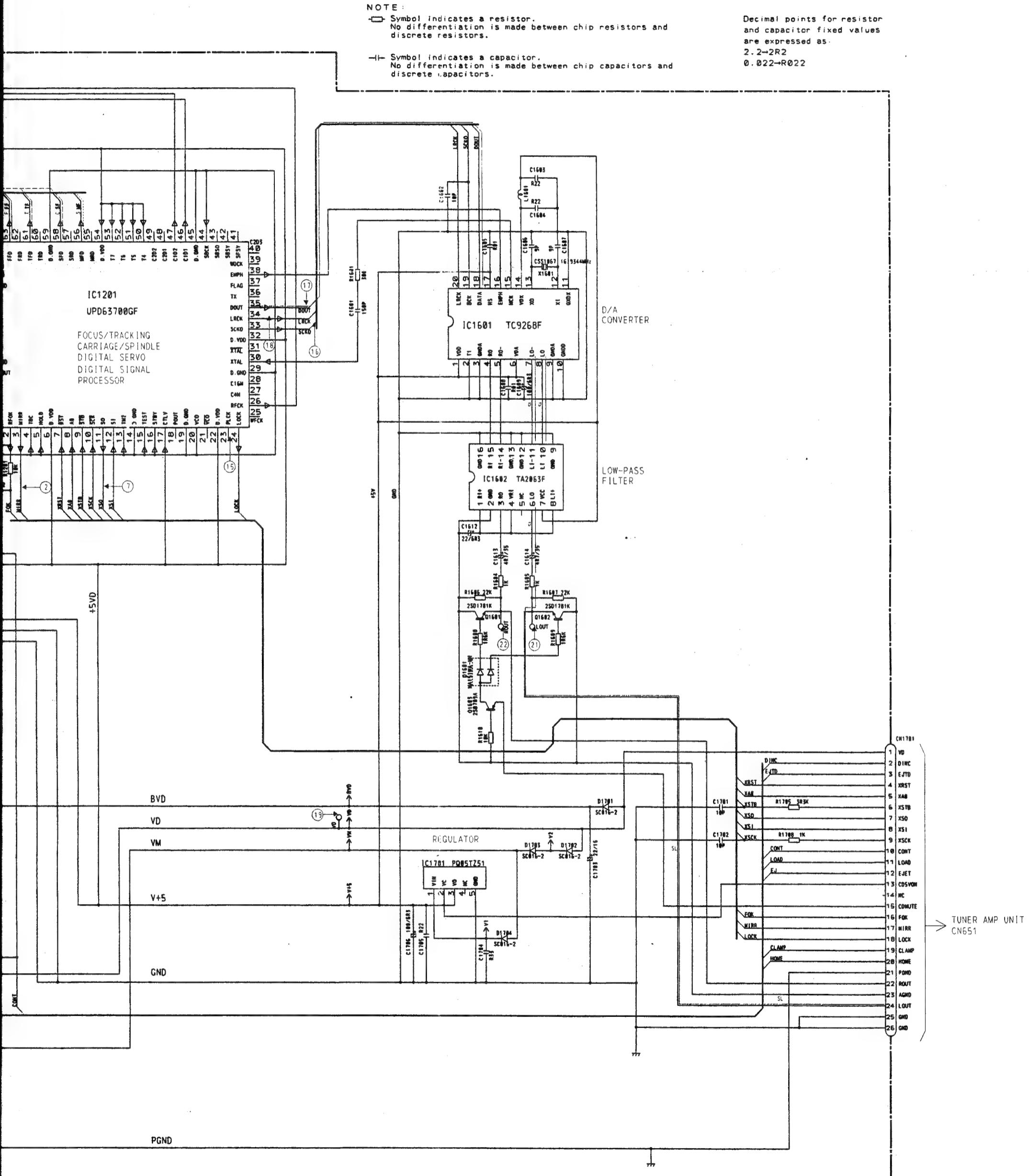
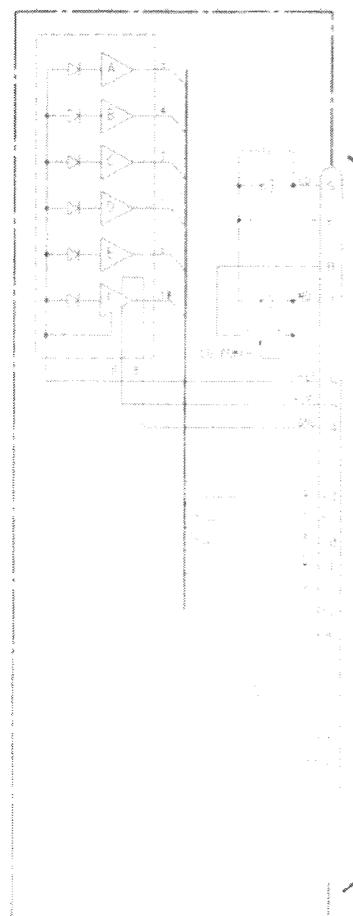
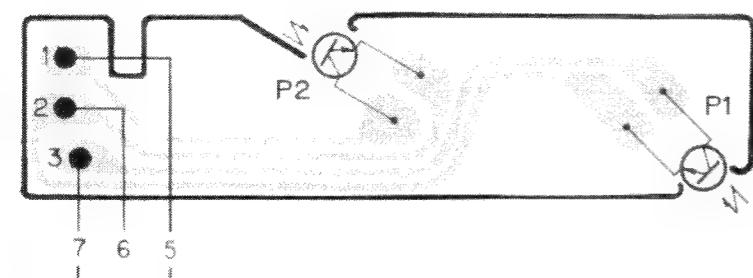


Fig.14

PU UNIT(CGY1031)

DETECTOR  
P.C.BOARDCONTROL UNIT  
CN1001

DETECTOR P.C.BOARD

CONTROL UNIT  
CN1801

CONTROL UNIT

IC, Q

IC302

IC301

IC303

IC1601

IC1602

Q1601

Q1602

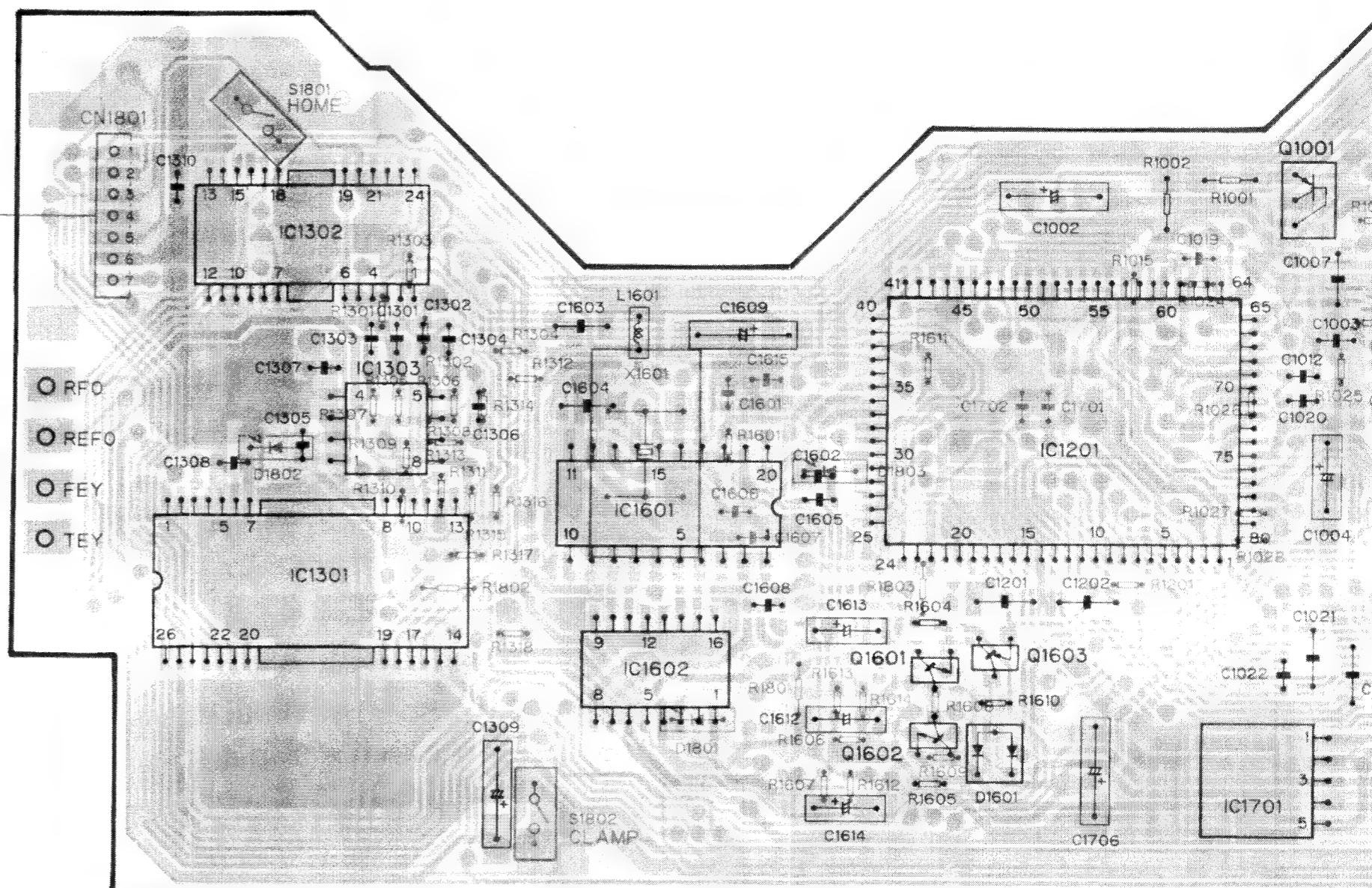
Q1603

IC1201

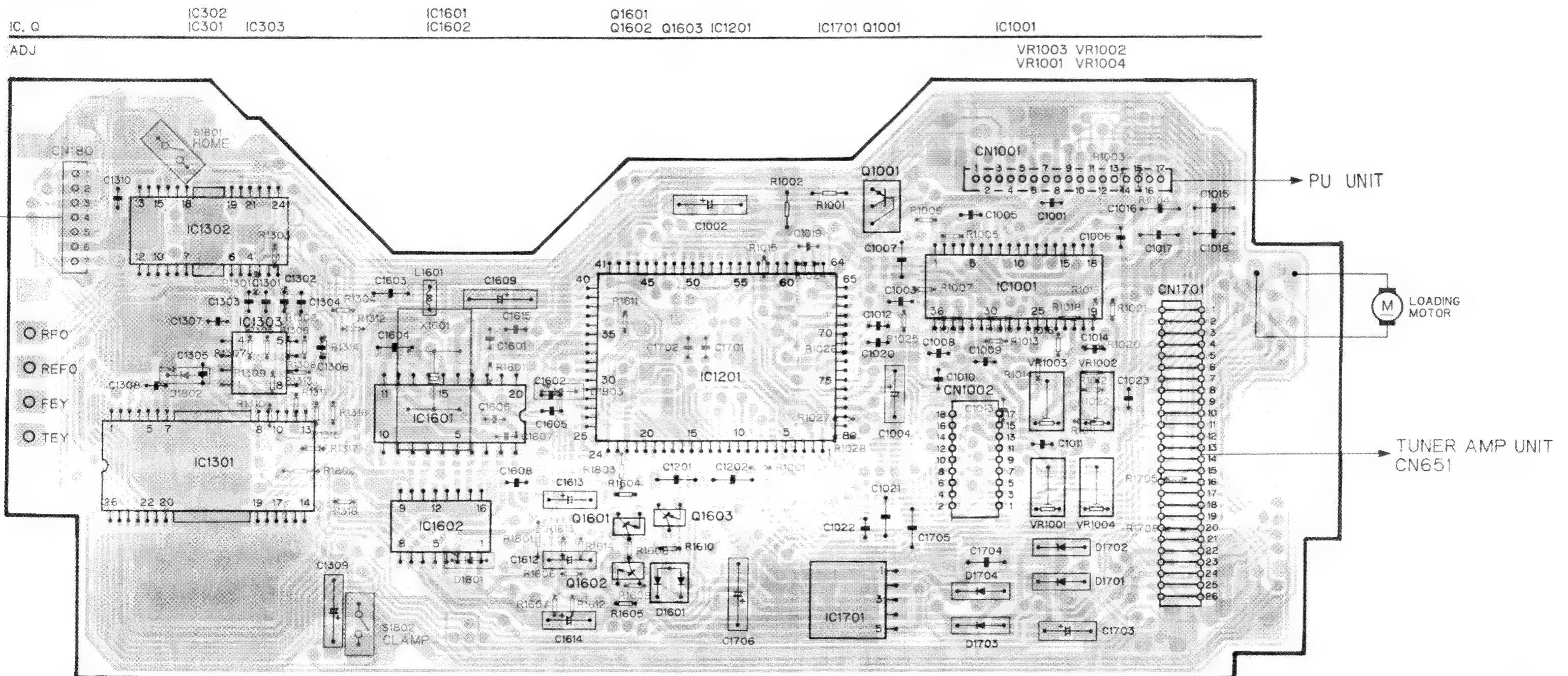
IC1701

Q1001

ADJ

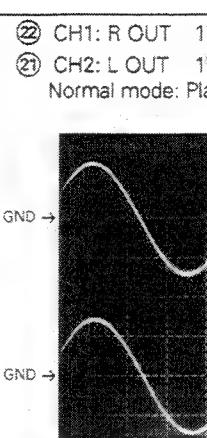
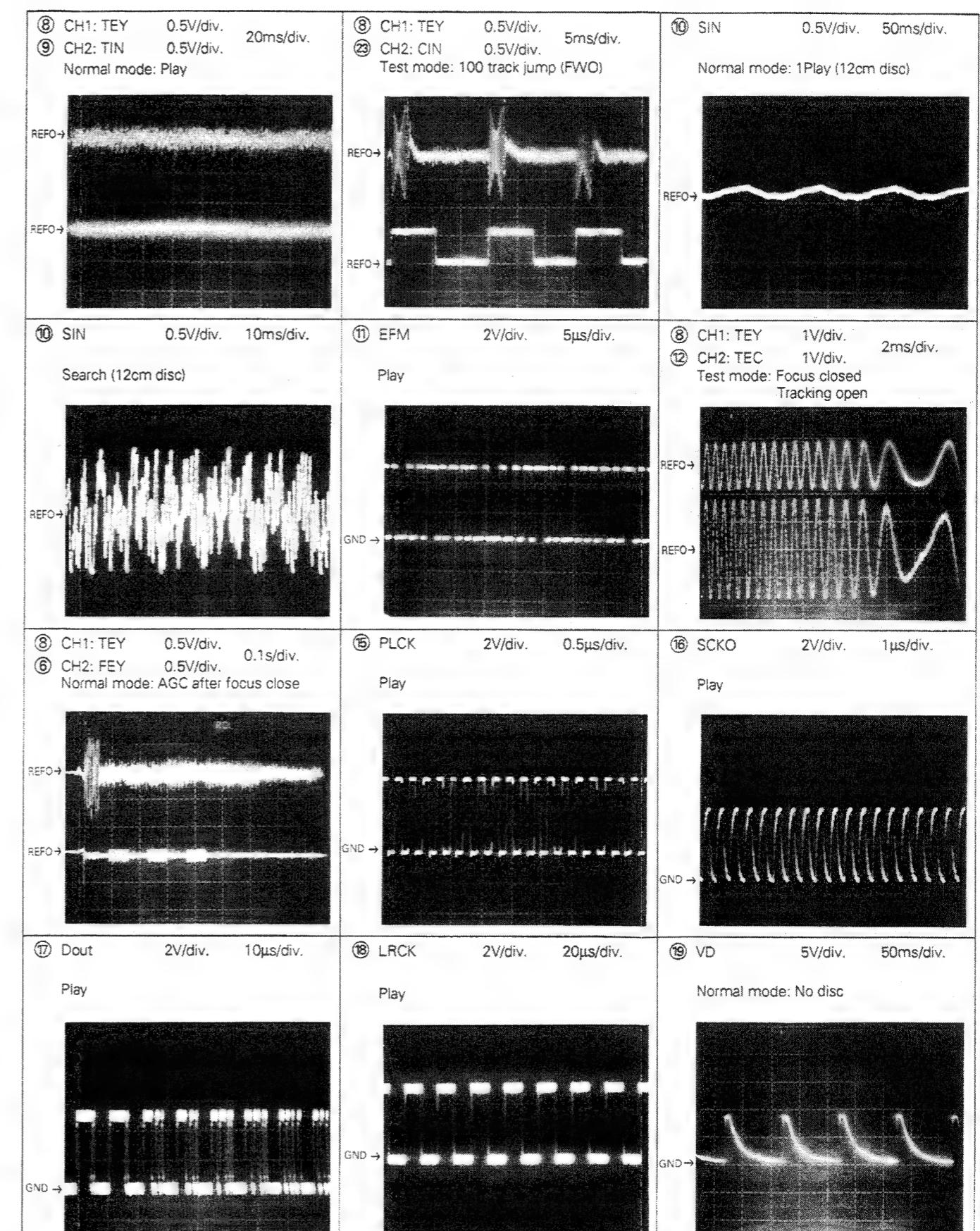
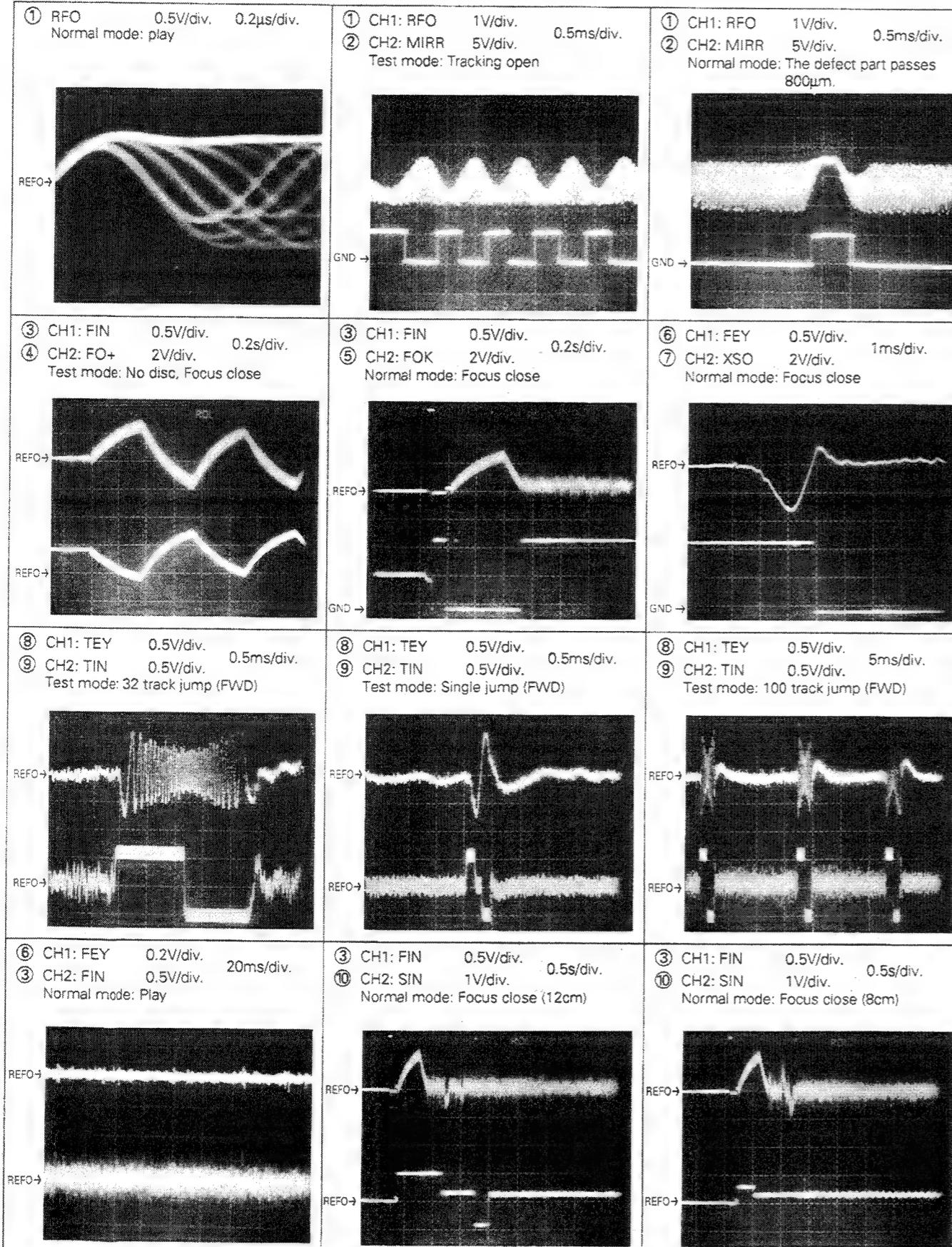


## CONTROL UNIT

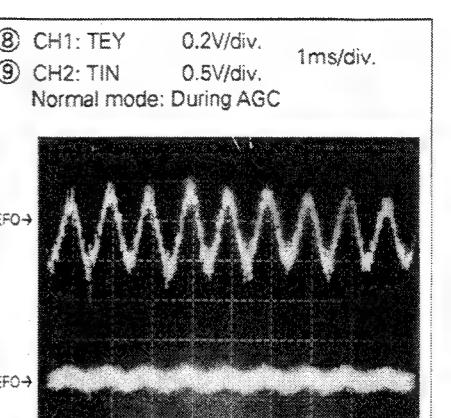
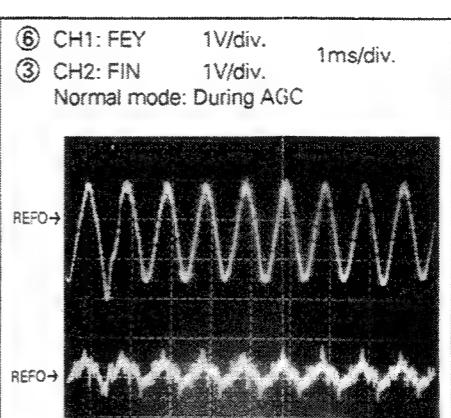
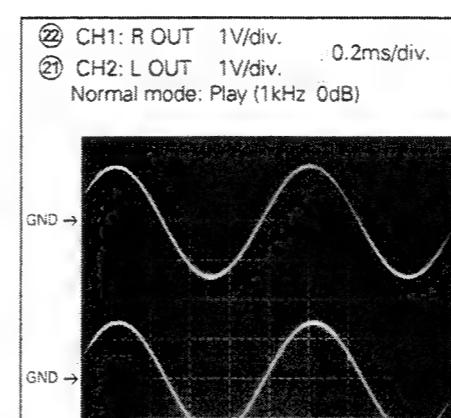
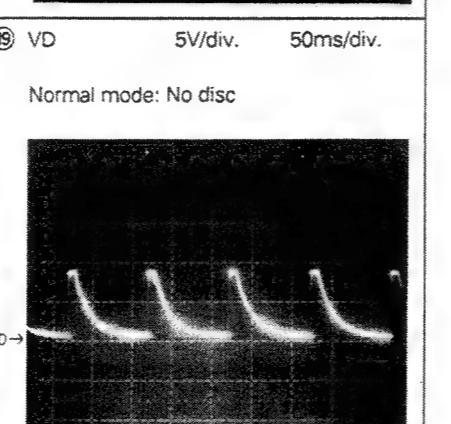
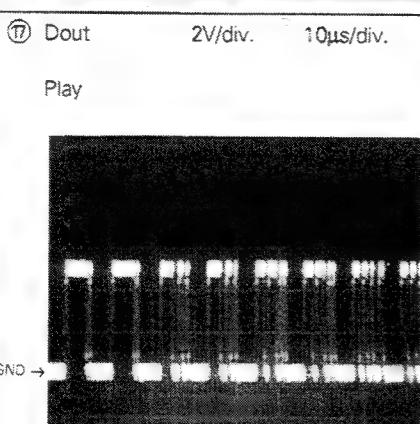
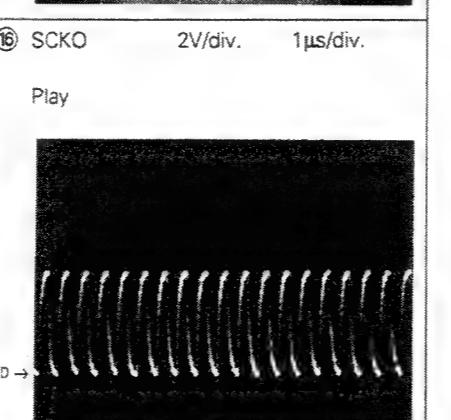
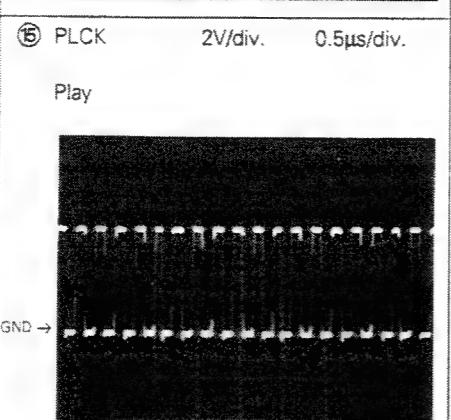
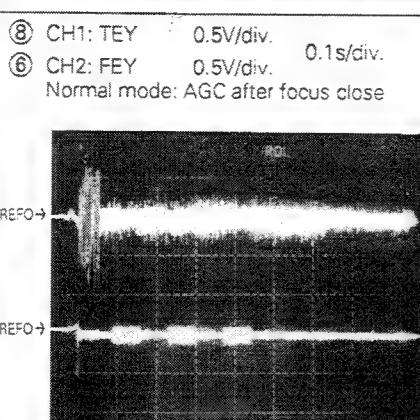
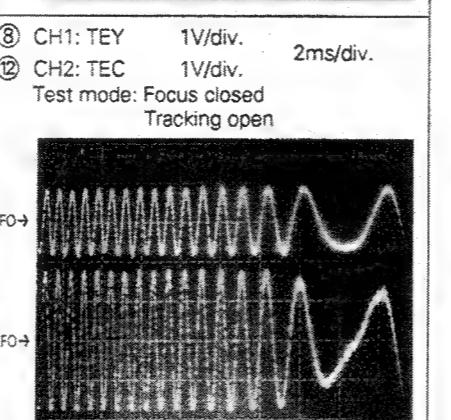
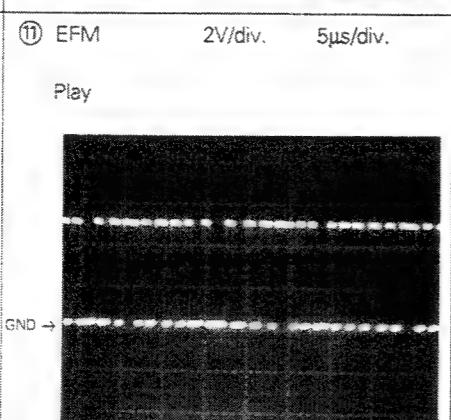
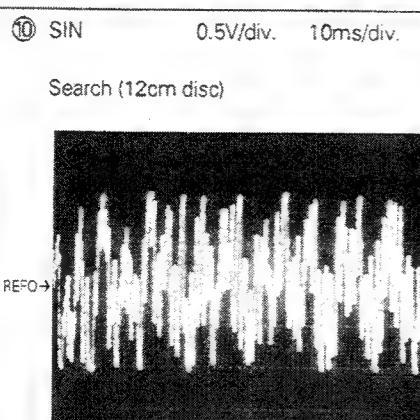
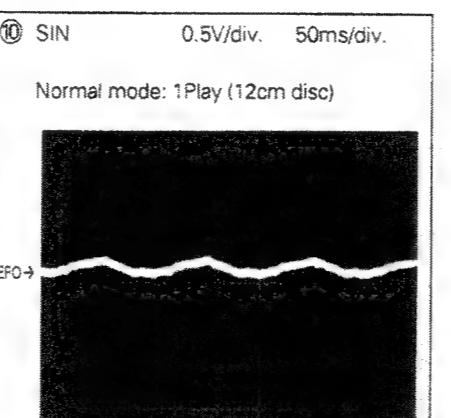
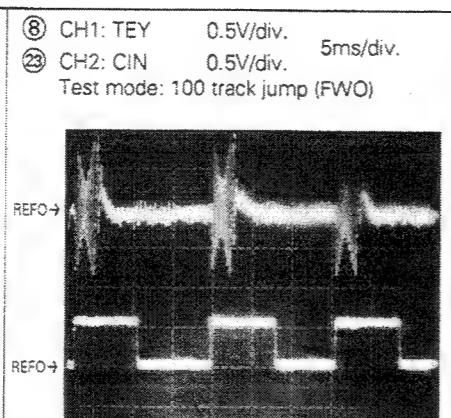
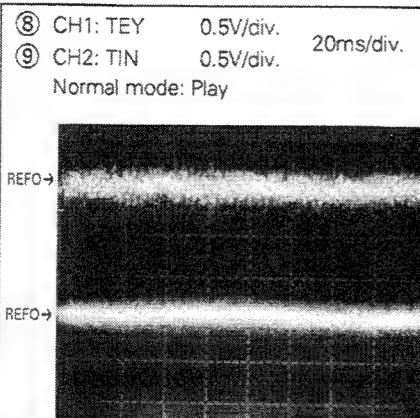


● Waveforms

Note: 1. The encircled numbers denote measuring pointes in the circuit diagram.  
2. Reference voltage  
REFO: 2.5V



ram.



## 4.5 FM/AM TUNER UNIT

### ● Circuit Diagram

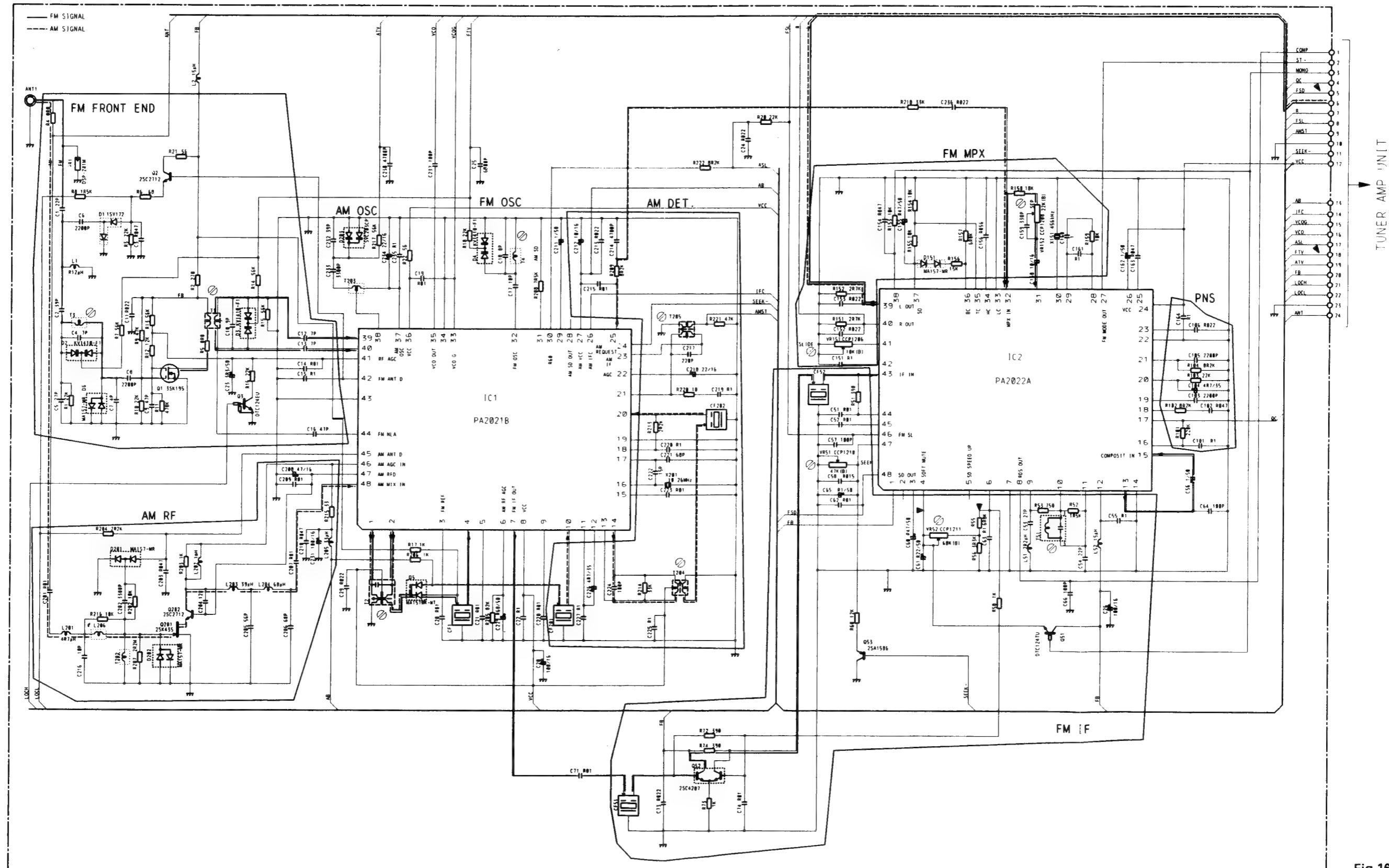
**NOTE**

- Symbol indicates a resistor.
- No differentiation is made between chip resistors and discrete resistors.

**II** Symbol indicates a capacitor.

- No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as  
2.2→R22  
0.022→R022



## ● Connection Diagram

A

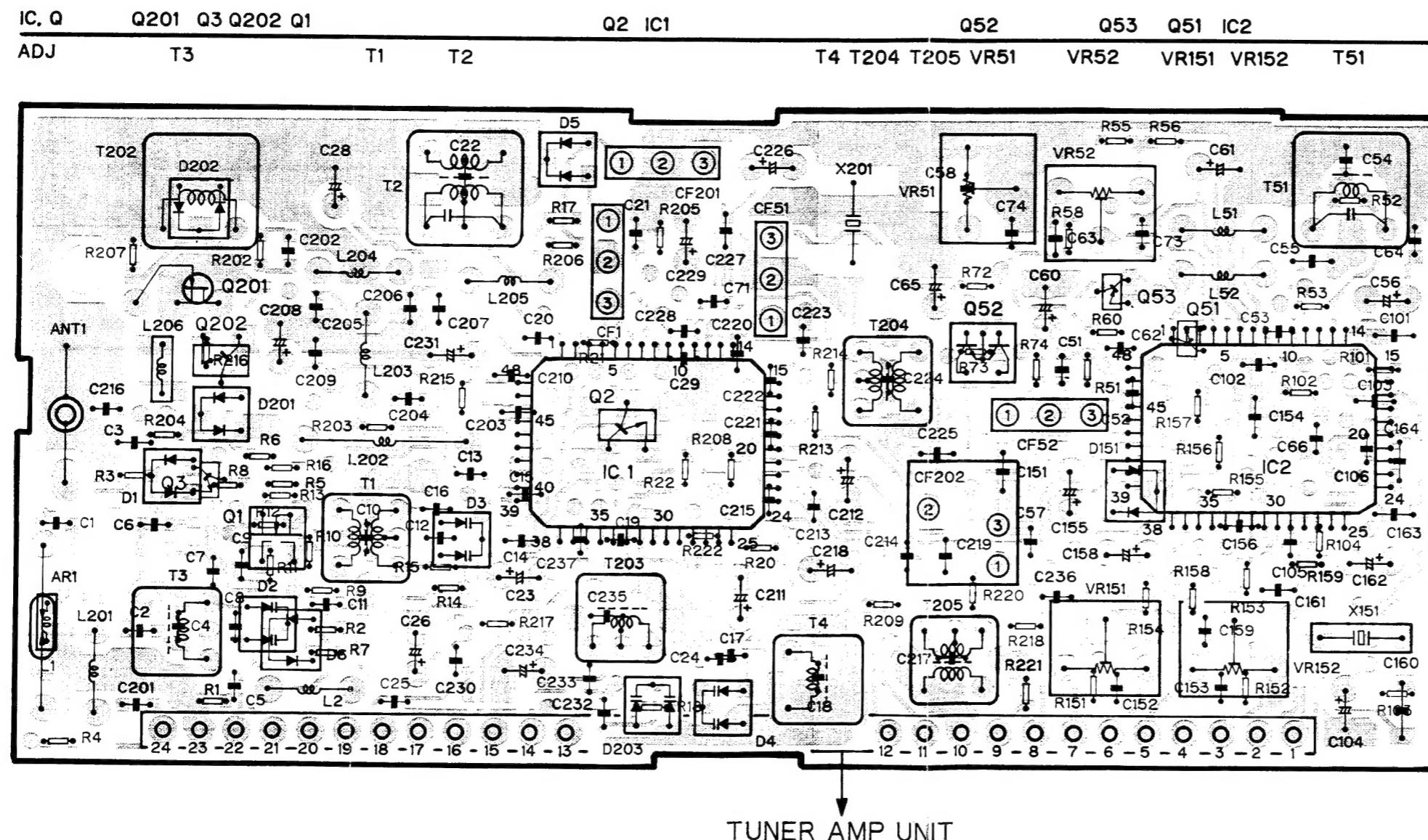


Fig. 17

B

6

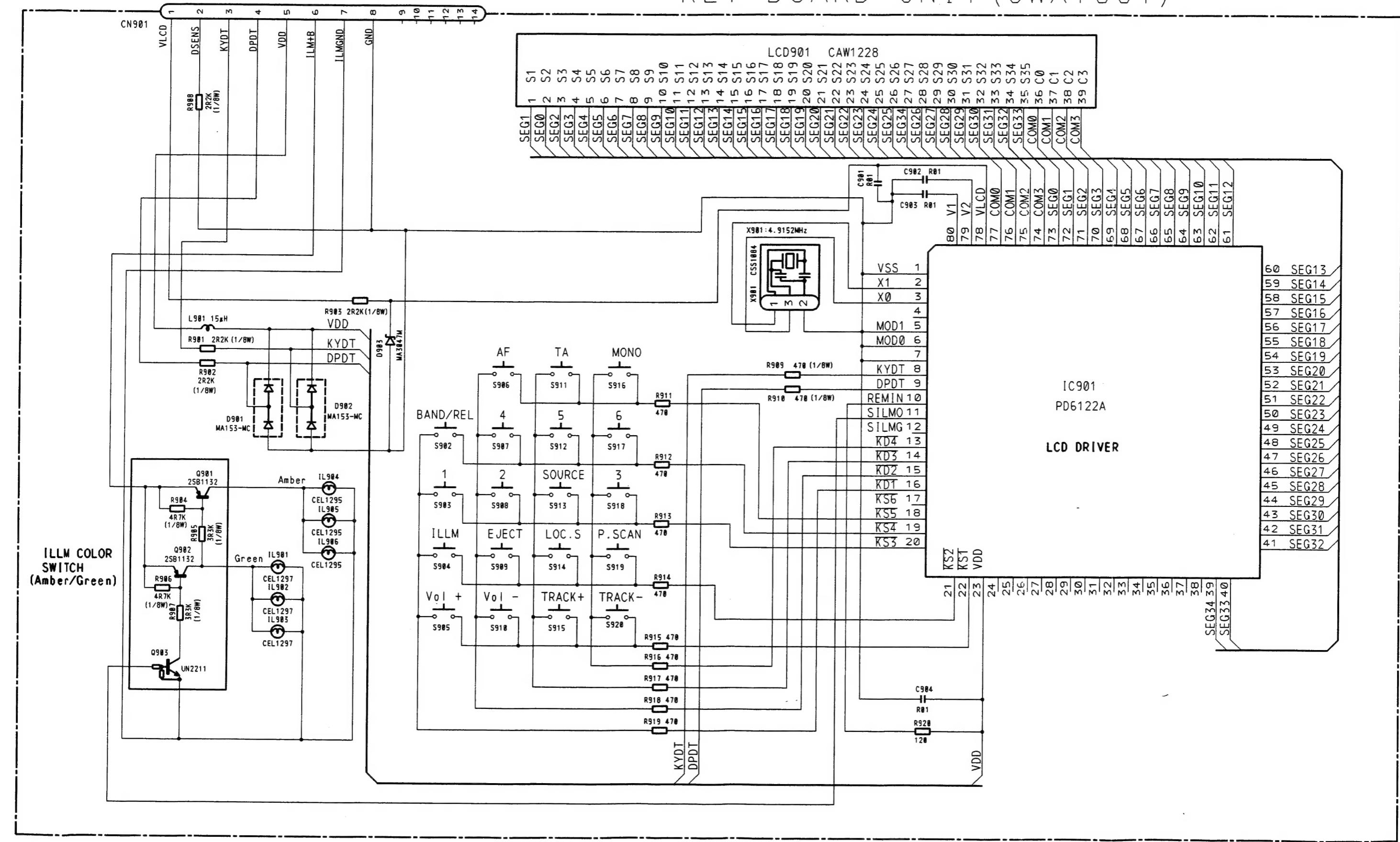
D

3.20

#### **4.6 KEY BOARD UNIT(DEH-605RDS)**

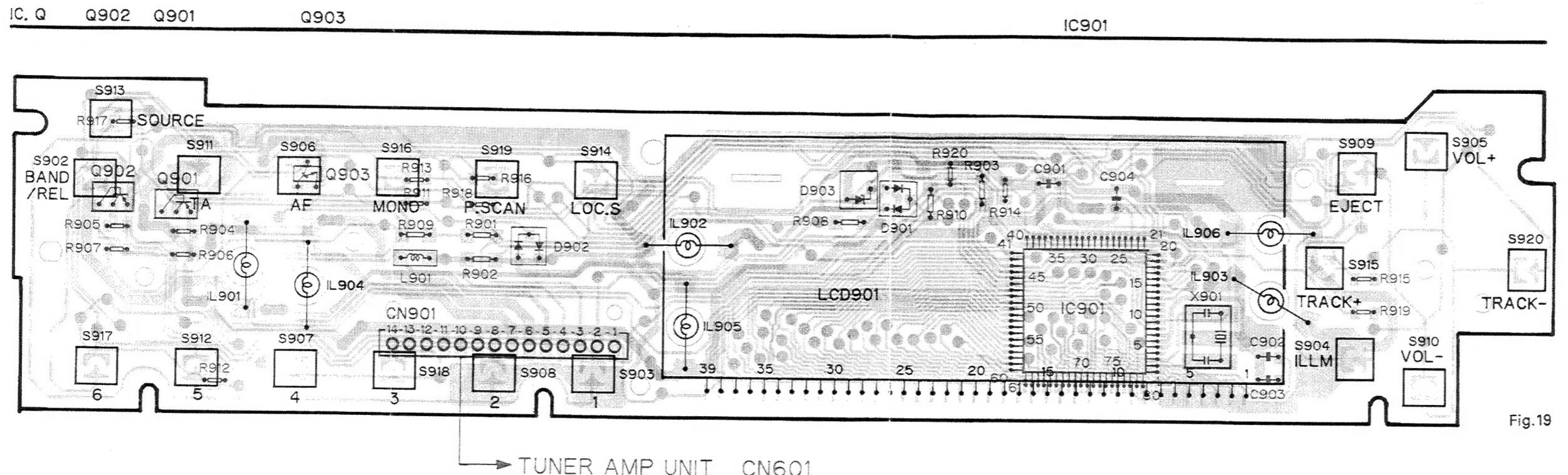
## ● Circuit Diagram

TO TUNER AMP UNIT CN601



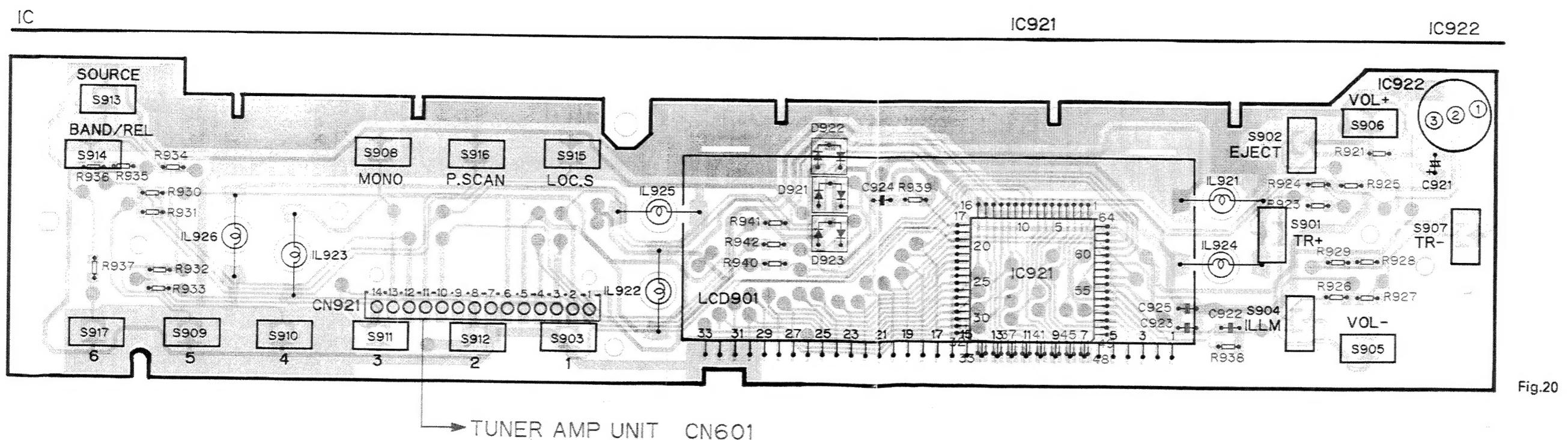
**Fig.18**

● Connection Diagram



#### 4.7 KEY BOARD UNIT(DEH-505SDK,505,405SDK,405)

● Connection Diagram



## ● Circuit Diagram

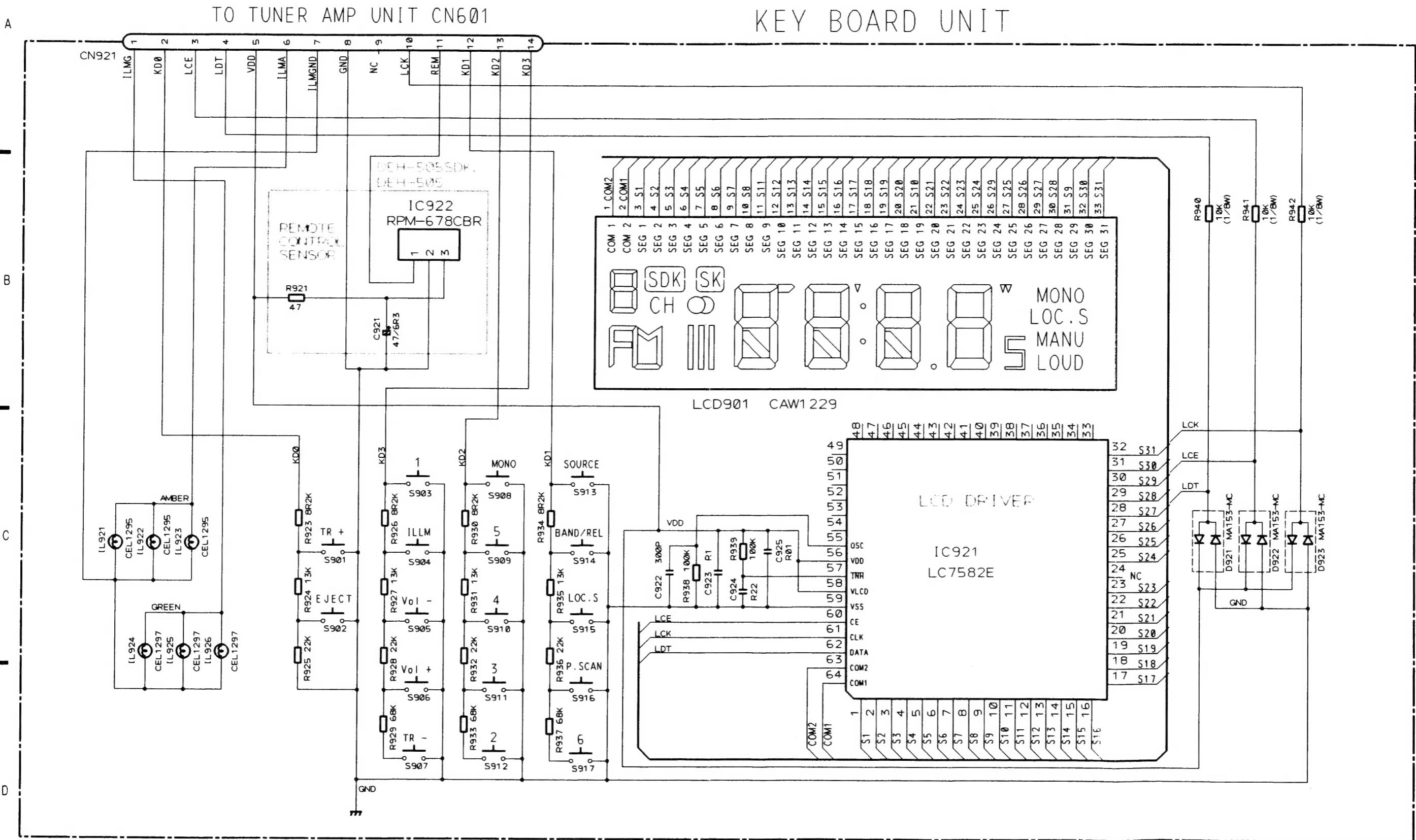


Fig.21